

OPERATIONS & MAINTENANCE
REPORT
SILVERBELL FIRING RANGE

Prepared for
City of Tucson – Environmental
Services
August 15, 2008

OPERATIONS & MAINTENANCE REPORT
SILVERBELL FIRING RANGE
TUCSON, ARIZONA

Prepared for
City of Tucson – Environmental Services
100 North Stone Avenue, 2nd Floor
Tucson, Arizona, 85701

August 15, 2008

Brown and Caldwell Constructors Project #: 134894

BROWN AND CALDWELL
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LIST OF ACRONYMS

°C	degrees Celsius
A.A.C.	Arizona Administrative Code
A.R.S.	Arizona Revised Statutes
ADEQ	Arizona Department of Environmental Quality
AZPDES	Arizona Pollutant Discharge Elimination System
BCC	Brown and Caldwell Constructors
COC	contaminants of concern
CY	cubic yards
ESC	Environmental Science Corporation
LCS	laboratory control sample
mg	milligrams
mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
MS/MSD	matrix spike/matrix spike duplicate
MT ²	Metals Treatment Technologies
NFA	No Further Action
NOI	Notice of Intent
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbons
PCS	petroleum contaminated soil
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
RAR	Remedial Action Report
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
rSRL	residential soil remediation level
SRL	soil remediation level
SSHP	Site Safety and Health Plan
SWPPP	Storm Water Pollution Prevention Plan
TC	toxicity characteristic
TCLP	toxicity characteristic leaching procedure
TWA	time-weighted average
USEPA	U.S. Environmental Protection Agency
VRP	Voluntary Remediation Program
WP	Work Plan

1. INTRODUCTION

This Operations and Maintenance(O&M) Report describes the procedures implemented and the analytical results obtained during the conduct of O&M activities at the Silverbell Firing Range (Site). The Site is located at 3200 North Silverbell Road in Tucson, Arizona (Figure 1). The Site is owned by the City of Tucson (City), who contracted with Brown and Caldwell Constructors (BCC), a wholly owned subsidiary of Brown and Caldwell licensed in the State of Arizona to perform general contracting (ROC 145798), to provide environmental engineering consulting services throughout the project. These services consisted of the preparation of the O&M Work Plan (WP), preparation of a health and safety plan (HASP), performance of baseline sample collection, O&M oversight, soil clearance sampling, and preparation of this O&M report. Brown and Caldwell retained Metals Treatment Technologies, LLC (MT²) to perform the required soil excavation, metal separation and recycling, soil stabilization, waste transportation and disposal, and site restoration.

1.1 Site Description and Project Background

According to the City Real Estate Department records, as stated in the City of Tucson Request for Proposal dated June 13, 2007, the City has owned the property since 1930, and originally contained a wastewater treatment plant. In 1953, the City closed and converted part of the wastewater plant into an armory. The target storage and tower for the firing range were erected in 1954. The shooting range has remained relatively unchanged. However, a backstop systems consisting of metal plates and a conveyor were removed in 1990.

A lead reclamation event was conducted in mid-1990s (after conveyor system disassembly) in which the soil backstop was excavated and screened. The shooting lanes and range floor were also screened for metals removal. The reclamation event resulted in 24 tons of projectiles and screened soil, which were sold to a smelter. No lead reclamation has occurred since. Two soil berms currently act as backstops.

The area of the range floor is approximately 200 feet (ft) by 150 ft. The northern half of the shooting range is covered by a shade structure standing approximately 15 ft high. Two berms (primary and secondary) are located directly to the north of the shooting range. The primary backstop extends from the base of the range floor to approximately 20 ft high. The secondary berm located north of the primary berm extending from its top, is approximately 30 ft wide by 300 ft long and 20 ft high. The armory is located in the southeast corner of the range floor.

1.2 Operations and Maintenance Objective

The City elected to perform O&M activities and to remediate the Site to residential soil remediation levels (rSRLs) to allow management of the property without environmental restrictions. These activities were performed solely for O&M purposes outside of regulatory oversight. However, the O&M activities performed under this contract were completed according to best management practices and current regulations at the time the work was completed.

None of the contaminants of concern (COCs) is a known human carcinogen identified in A.A.C. R18-7-205.D. Additionally, the current or currently intended future use of the property does not include a child care facility or a school where children below the age of 18 are reasonably expected to be in frequent, repeated contact with the soil. Therefore, the O&M objective for the Site is based on the rSRLs that correspond with a 1×10^{-5} excess lifetime cancer risk.

This section further states that a person who conducts a soil remediation based on the standards set forth in R18-7-205 or R18-7-206 shall remediate soil so that any concentration of contaminants remaining in the soil after remediation does not:

1. Cause or threaten to cause a violation of Water Quality Standards prescribed in 18 A.A.C. 11. If the remediation level for a contaminant in the soil is not protective of aquifer water quality and surface water quality, the person shall remediate soil to an alternative soil remediation level that is protective of aquifer water quality and surface water quality.
2. Exhibit a hazardous waste characteristic of ignitability, corrosivity, or reactivity as defined in A.A.C. R18-8-261(A). If the remediation level for a contaminant in the soil results in leaving soils that exhibit a hazardous waste characteristic other than toxicity, the person shall remediate soil to an alternative soil remediation level such that the soil does not exhibit a hazardous waste characteristic other than toxicity.
3. Cause or threaten to cause an adverse impact to ecological receptors. If the Department determines that the remediation level for a contaminant in soil may impact ecological receptors based on the existence of ecological receptors and complete exposure pathways, the person shall conduct an ecological risk assessment. If the ecological risk assessment indicates that any concentration of contaminants remaining in the soil after remediation causes or threatens to cause an adverse impact to ecological receptors, the person shall remediate soil to an alternative soil remediation level, derived from the ecological risk assessment that is protective of ecological receptors.

Review of the contaminants associated with the proposed treatment areas indicated that use of pre-determined remediation levels (R17-7-205) was appropriate in determining the concentration of contaminants in soil requiring treatment.

1.3 Operations and Maintenance Approach

To accomplish this O&M objective, the following approach was implemented:

- meet all regulatory requirements for site work including:
 - lead in construction monitoring requirements,
 - storm water management and erosion control,
 - control of fugitive dust emissions,
 - waste characterization and management, and
 - site security;
- utility clearance for all areas where excavation may occur;
- coordination and participation in City's preconstruction meetings;
- collect baseline samples and perform exploratory excavations to evaluate the basal soil within the secondary berm;
- delineate impacted areas and perform excavation, treatment and disposal operations;
- conduct soil clearance sampling after O&M activities are complete to confirm that the concentration of remaining metals are below their respective rSRLs; and
- collect wipe samples from the armory building surfaces.

2. OPERATION & MAINTENANCE ACTIVITIES

The following sections describe the O&M tasks implemented at the Site. During the O&M activities, storm water control and dust control procedures, as well as personal and area perimeter air monitoring were implemented in accordance with the work plan (WP) and/or with specific permit requirements.

2.1 Community Relations

Prior to the start of field activities, Brown and Caldwell Constructors and the City prepared and distributed a general public notice to property owners located within 1/8 mile of the Site that may encounter potential impacts either by dust or noise from the work area. This notice was delivered as door hangings, and was in the form of a fact sheet containing contact information for Brown and Caldwell Constructors and City of Tucson's Project Managers, as well as a description of the nature and type of O&M activities to be conducted, and the anticipated schedule of field activities. A copy of the general public notice is included in Appendix A.

In addition to the above notice, a sign was located near the southwest corner of the Site including the names and telephone numbers of persons who may be contacted for information regarding the site activities.

2.2 Baseline Composite Soil Sampling

Baseline composite soil samples from the secondary berm, primary backstop, the range floor, and the basal layer of the secondary berm were collected using the following procedures:

- Prior to sampling, new nitrile gloves were worn to prevent cross-contamination.
- Each sub-sample was collected from the specified locations of the range floor, primary, and secondary berms using a disposable polyethylene scoop or similar.
- A laboratory-supplied 4-ounce glass jar was filled with soil material from each sub-sample location. The soil was placed into a clean 1-gallon plastic sealable bag.
- Soil from each sub-sample was thoroughly mixed in the 1-gallon plastic bag to generate a homogenized material. The 4-ounce glass jar was filled with the homogenized material to comprise the composite sample.
- Each sample container was properly labeled, logged onto chain-of-custody and field sampling forms, placed in sealable plastic bags, and stored with ice in an insulated container maintained at 4 degrees Celsius (°C) until submitted to the laboratory for analyses.

Specific identification used for the samples conformed to the following naming convention:

For baseline composite samples collected from the near surface of the secondary berm, the sample identification was **COT-BSB-NS-E/EC/C/WC/W**, where COT stands for City of Tucson, BSB refers to baseline sample from the secondary berm, NS refers to near surface, and E/EC/C/WC/W is a two letter designation of the segment of the berm where the composite sample was collected.

For baseline composite samples collected from the primary backstop, the sample identification was **COT-BPB-E/EC/C/WC/W**, where COT stands for City of Tucson, BPB refers to baseline sample from primary backstop, and E/EC/C/WC/W is a two letter designation of the segment of the berm where the composite sample was collected.

For baseline composite samples collected from each quadrant of the range floor, the sample identification was **COT-BRF-SW/NW/NE/SE**, where COT stands for City of Tucson, BRF refers to baseline sample from range floor, and SW/NW/NE/SE is a two letter designation of the quadrant where the sample was collected.

For baseline composite samples collected from the basal soil of the secondary berm, the sample identification was **COT-BSB-BS-W/C/E-##**, where COT stands for City of Tucson, BSB refers to baseline sample from the secondary berm, BS refers to basal soil, W/C/E refers to the trench from which the composite sample was collected (west, central or east), and ## refers to the depth in inches at which the sample was collected.

Dates and times of collection for each sample were noted on the container label, the field notes, and the chain-of-custody. The required documentation for each sample was recorded in the field notes, as applicable.

The baseline composite samples were analyzed for total lead and/or antimony, arsenic and copper, using USEPA Test Method 6010B. The analytical results obtained are discussed in Section 3.1.

2.3 Treatment Process

Two methods of treatment were used at the site to address soil impacted with lead: chemical stabilization using EcoBond® and a mechanical screening process to remove bullet sized fragments. The following sections provide a summary of each treatment method implemented during the O&M activities.

2.3.1 Chemical Stabilization (EcoBond®)

The method of treatment for the lead impacted soil was chemical stabilization. The reagent used to treat the lead impacted soil was EcoBond®, which is a phosphate-based stabilizing agent that chemically bonds with lead and other metals when mixed with the soil. MT² performed the soil treatment, confirmation sampling, and worker air monitoring and Brown and Caldwell Constructors performed clearance sampling and perimeter air monitoring. The treatment goal was the resource conservation and recovery act (RCRA) toxicity characteristic (TC) limit for lead (5.0 milligrams per liter [mg/L]).

The EcoBond® was delivered by truck and stored on site in a manageable stockpile. MT² conducted treatment of soils in place prior to excavating the material. The area was prepared for treatment by loosening the soil to the desired depth with an excavator or dozer with rippers. The EcoBond® pellets were dispersed over the surface of the area to be treated using a front-end loader. The EcoBond® was mixed into the soil using an excavator or dozer with rippers to ensure adequate dispersion. A water truck sprayed the area during mixing to keep fugitive dust emissions to a minimum and to expedite the bonding process. Details regarding EcoBond® are included in Sections 6.0 and 7.0 of the MT² report (Appendix B).

2.3.2 Mechanical Screening

MT² used mechanical screening to recover bullet-sized fragments from soil and to evaluate for potential metals recycling. Soil treated with EcoBond® from the first lift of the range floor and the primary backstop was screened. Additionally, approximately three inches of soil from the east and west side slope areas of the range floor were also excavated and screened. This material did not receive EcoBond® treatment, however, the mechanical screening removed some of the bullet-sized fragments that were visually observed in the field and the remaining soil was put back in place. A sample from the screened material collected by MT² detected a lead content of only 1 to 4 percent by weight. The presence of a large volume of bullet-sized rocks resulted in a low lead concentration and; therefore, a very low recyclable value. Screened material was then treated with EcoBond® and disposed of with metals impacted soil. Details regarding the soil screening and evaluation for metal recycling are included in Section 7.0 of the MT² report (Appendix B).

2.4 Treatment Confirmation Sampling

Following the in-place mixing, one composite soil sample was collected from each 100 cubic yard (CY) of treated material. Treatment confirmation composite samples were collected using the following procedures:

- Prior to sampling, new nitrile gloves were worn to sample treated soil to prevent cross-contamination.
- A total of four sub-samples were collected from various locations of the treated area at an approximate depth of 12 inches, using a disposable polyethylene scoop.
- A laboratory-supplied, 4-ounce glass jar was filled with soil material from each sub-sample location. The soil was then placed into a clean 1-gallon plastic resealable bag.
- Soil from each sub-sample was thoroughly mixed to generate a homogenized material. A new laboratory-supplied, 4-ounce glass jar was then filled with the homogenized material.
- Each sample container was labeled, logged onto chain-of-custody and field sampling forms, placed in resealable plastic bags, and stored with ice in an insulated container maintained at 4°C until submitted to the laboratory for analyses.

Dates and times of collection for each sample were noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample was recorded in the field notes, as applicable.

Treated confirmation composite samples were analyzed for toxicity characteristic leaching procedure (TCLP) for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury) using U.S. Environmental Protection Agency (USEPA) Test Methods 6010B and 7470. The analytical results obtained are discussed in Section 3.2. The material was left in place until the laboratory results confirmed that the TCLP analysis was below the TC limit. Material associated with each lead treatment confirmation sample results below 5 mg/L, was excavated and stockpiled.

2.5 Treatment, Excavation and Clearance Sampling

Clearance samples were collected from the Site to demonstrate that contaminants of concern (COCs) are not present at concentrations in excess of their respective rSRLs. Clearance soil samples were collected from the secondary berm, primary backstop, and the range floor. Lead wipe samples were collected from the armory building.

2.5.1 Clearance Soil Sampling

Following treatment, approximately 3 inches of treated soil were removed from the top and south face of the secondary berm. Clearance soil samples were collected along the top of the secondary berm following treatment and removal as shown in Figure 3. Eight soil samples were collected at intervals of approximately 30 ft starting from the east end of the secondary berm.

The primary backstop was treated in two sections. Approximately 1.5 ft of soil was removed from 150 ft of the south face of the primary backstop starting at the west end of the berm. For the remaining 50 ft of the primary backstop on the east side, 1 ft of soil was removed. The adjustment to the depth of excavation was based on the presence of a retaining wall located behind the primary backstop. Eight clearance soil samples were collected at the locations shown in Figure 4.

For the initial treatment of the range floor, 6 inches of soil was removed. A total of 12 soil samples were collected from the range floor, 3 from each quadrant, at the locations shown in Figure 5.

The area between the primary and secondary berm was treated and approximately 3 inches of treated soil, for a total of 22 CY, were removed from that area.

Wood, metal, and debris was located along the southern portion of the range floor. Once the debris was removed from the area south of the four main quadrants of the range floor, two composite soil samples were collected from the western and the eastern ends of the area. The sample identifications used were COT-RF-BW/BE, where COT stands for City of Tucson, RF stands for range floor, and BW/BE stands for “back west” or “back east” section. The results are discussed in Section 3.1.

A concrete pipe located in the northeast portion of the range floor used for rifle shooting was removed. The soil above and around the pipe was removed and stockpiled for later use as backfill following pipe removal. The pipe was removed from the range as well as soil beneath and in the pipe. Soil beneath and inside the pipe was treated with EcoBond®. A total of eight CY were treated from the area of the rifle tunnel. On April 21, 2008, a composite soil sample was collected and analyzed for total lead using USEPA Test Method 6010. The sample identification used was COT-PIPE-01. The results are discussed in Section 3.5.

The clearance soil samples were collected using the following procedures:

- Prior to sampling, new nitrile gloves were worn at each new composite sampling location to prevent cross-contamination.
- Clearance samples were collected from a depth of 0 to 3 inches using disposable polyethylene scoops.
- Using the sampling tool, the top layer of soil, vegetation, roots, pebbles, and/or debris was removed from the sampling area.
- A laboratory-provided 4-ounce glass jar was filled with soil material from each sample location.
- Each sample container was properly labeled, logged onto a chain-of-custody and field sampling forms, placed in sealable bags, and stored with ice in an insulated container maintained at 4°C until submitted to the laboratory for analyses.

The naming convention for the clearance samples followed **COT-RF/PB/SB-##**, where COT stands for City of Tucson, followed by the appropriate two letter location designation (RF for range floor, PB for primary backstop, and SB for secondary berm), followed by the numeric identification for each sample location. If additional treatment and removal of material was necessary based on elevated metals result, the naming convention was appended with **-##**, representing the additional number of inches of soil that was treated and removed from the area.

The dates and times of collection for each sample were also noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample was recorded in the field notes, as applicable.

The soil clearance samples were submitted to the laboratory to be analyzed for total lead and/or arsenic, antimony, and copper by USEPA Test Method 6010. The analytical results obtained are discussed in Section 3.3.

Additionally, Brown and Caldwell Constructors and MT² utilized a hand held x-ray fluorescence (XRF) analyzer to field screen levels of total lead in surficial soils. The XRF was used to give real time estimates of total lead in surficial samples. Soils analyzed by the XRF were placed in a clear plastic bag. The XRF was placed on the surface of the bag and held in place for at least one minute to collect a reading. Results of the XRF are discussed in Section 3.3.

2.5.2 Armory Building Lead Wipe Sampling

BCC collected a total of six lead wipe samples from the armory building using a sampling gauze and a 10 centimeter-square (cm²) template using the following procedure:

- Sample location was identified randomly from the interior of the building.

- The template was placed flat against the surface at the selected sample location.
- The gauze was used to wipe the area on the surface exposed by the template in ascending horizontal strokes.
- The gauze was then placed in a 4-ounce glass jar and labeled. The sample was stored in a sealable plastic bag and stored with ice in an insulated container maintained at 4°C until submitted to the laboratory for analyses.
- The template was cleaned and dried between each use.

Specific identification used for the samples conformed to the following naming convention: **COT-AB-MMDD-##**, in sequential order for each random location sampled where COT stands for City of Tucson, AB stands for “Armory Building,” MM is the two-digit month, DD is the two-digit day, and ## is the sequential number of the sample collected.

Dates and times of collection for each sample were noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample was recorded in the field notes, as applicable. Samples were submitted to the laboratory for analysis of total lead using USEPA Test Method 6010. The analytical results obtained are discussed in Section 3.4.

2.6 Transportation and Disposal of Treated Material

Once the analytical results verified the treatment goal was met (TCLP lead less than 5.0 mg/L), MT² submitted each analytical laboratory report to City of Tucson’s Los Reales Landfill (Los Reales) for review and approval. Following acceptance of each 100 CY of treated material, MT² loaded, transported, and disposed of the treated material at Los Reales as non-hazardous waste. The trucking company used was Rueger’s H20 Trucking. A total of 71 truck loads, containing 1,521.05 tons of screened and treated material, were disposed at Los Reales as non-hazardous waste. The waste disposal manifests are included in MT²’s report in Appendix B.

2.7 Storm Water Management

The O&M project involved construction-related activities regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) Program for Discharges from Construction Activities (General Permit). Accordingly, MT² prepared and submitted to Arizona Department of Environmental Quality (ADEQ) a Notice of Intent (NOI) pursuant to the General Permit. Because the proposed discharge from the O&M activities was classified as a “Routine Discharge” under Part II.B.4 of the General Permit, the NOI was submitted to ADEQ within two business days prior to any construction activity. A Storm Water Pollution Prevention Plan (SWPPP) was developed for this project and maintained on Site by MT².

2.8 Dust Control

MT² obtained a dust control permit from Pima County Department of Environmental Quality – Air Program for earthmoving activities conducted at the Site. The procedural requirements specified in the associated dust control plan were conducted on Site to reduce fugitive dust emissions.

2.9 Air Monitoring

During O&M activities, MT² and Brown and Caldwell Constructors performed worker area and perimeter air monitoring in accordance with the procedures described in the air monitoring plan included in the WP. The purpose of the air monitoring was to identify and quantify airborne contaminants to verify the level of worker

protection and evaluate potential off-site impacts. Air monitoring was performed using air sampling pumps and particulate monitors (Data-Ram) as summarized below:

- Baseline air monitoring, using the Data-Ram, was performed in morning prior to the start of O&M activities from April 16, 2008 – April 25, 2008. After which monitoring was discontinued based on continuous observations of low levels of particulates detected and as described in Section 5 of the Health and Safety Plan (Brown and Caldwell, 2008).
- Real-time measurements were made as near as feasible to the breathing zone of workers with the greatest exposure potential in each active work area.
- Perimeter air monitoring was performed at scheduled intervals (approximately every 30 minutes) during O&M activities using a Data-Ram between April 16, 2008 and April 25, 2008.

The potential generation of lead-containing fugitive dust emissions during O&M activities was minimized using dust control procedures. Worker and perimeter air monitoring was conducted to verify the adequacy of control measures. A total of 15 air filter samples were collected and submitted to Turner Laboratories for total lead analyses using USEPA Test Method 6010. Analytical results obtained are presented in MT²'s report in Appendix B.

3. ANALYTICAL RESULTS

This section presents the analytical results obtained from the analyses of treatment confirmation samples; surface soil clearance samples from the secondary berm, the primary backstop, and the range floor; lead wipe samples from the armory building; and continuous air monitoring samples.

3.1 Baseline Composite Soil Samples

A total of 15 (14 parent samples and 1 duplicate sample) baseline composite soil samples were collected from the secondary berm, the primary backstop and the range floor on March 24, 2008. The parent baseline soil samples consisted of five composite soil samples from the secondary berm, five composite soil samples from the face of the primary backstop, and four composite soil samples (one for each quadrant) from the range floor. All baseline composite soil samples were analyzed for total lead using USEPA Test Method 6010B. Additionally, a total of seven samples from these three areas (2 samples from each area plus the duplicate sample) were also analyzed for total antimony, arsenic, and copper using USEPA Test Method 6010B.

The basal layer of the secondary berm was investigated on April 21, 2008 by excavating three trenches: one on the west end, one centrally located, and one on the east end of the berm (Figure 2). For each trench, three composite samples were collected from each depth of 3, 18, and 30 inches above the base of the berm and were composed of three sub-samples from each depth. All samples were submitted for total lead, antimony, arsenic and copper, using USEPA Test Method 6010B. No samples from the basal layer of the secondary berm had results that exceeded the respective rSRLs; therefore, no further excavation of the overburden of the secondary berm was conducted.

These results for all of the baseline soil samples are summarized in Table 1 and the complete analytical laboratory reports are included on compact disc in Appendix C.

3.2 Treatment Confirmation Samples

During the period of April 12 through April 28, 2008, MT² collected a total of 15 treatment confirmation soil samples. Samples were submitted to Turner Laboratories for TCLP analyses for 8 RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury) to confirm treatment effectiveness in reducing lead leachability to below the 5.0 mg/L TC limit. The analytical results are summarized in Table 2. Complete analytical laboratory reports are included on compact disc in Appendix C.

The analytical results indicate that the concentration of TCLP lead in the 15 samples were all non-detect (i.e., less than 1.0 mg/L) except one sample (TCLP-0423-05) which had a concentration of 1.1 mg/L, which is well below the 5.0 mg/L treatment goal. All other metals analyzed were below their respective laboratory detection limits.

3.3 Clearance Soil Sampling

A total of 54 surface soil clearance samples (consisting of 37 parent samples, 5 duplicate samples, and 12 samples from areas that required additional excavation and treatment) were collected and submitted to Turner Laboratories for total lead analyses using USEPA Test Method 6010. Additionally, 10 of the parent surface soil clearance samples were analyzed for total arsenic, antimony, and copper using USEPA Test Method 6010B. The analytical results of metals are summarized in Table 3. Complete analytical laboratory reports are included on compact disc in Appendix C.

Based on the initial clearance soil sample results, several areas were determined to contain concentrations of total lead, antimony, and/or arsenic in excess of their rSRLs. For the secondary berm, 1 sample (COT-SB-05) exceeded the rSRLs for lead and antimony. MT² treated and excavated an additional 3 inches of soil from this area. Brown and Caldwell Constructors collected another surface soil clearance sample (COT-SB-05+03) from the newly exposed area and the analytical results indicated that the concentrations of lead and antimony were below their rSRLs. Similarly, the primary backstop had three soil samples with results that exceeded the rSRL for lead and/or antimony. An additional 6 inches was treated and removed from these areas and three secondary clearance samples were collected and analyzed. The three secondary clearance samples for the primary backstop contained metal concentrations below their rSRLs. The range floor had seven samples that exceeded rSRLs for lead and/or antimony and arsenic. Three to six inches of additional material was treated and removed from the areas associated with these samples. Figure 5 shows the areas of the range floor that had additional soil removed and the additional depth of excavation. All of the secondary clearance samples associated with the additional excavations on the range floor contained metal concentrations below their respective rSRLs.

3.4 Armory Building Lead Wipe Sample Results

A total of eight lead wipe samples, consisting of six primary samples and two equipment blanks, were collected from the armory building interior walls. These eight samples were submitted to Turner Laboratories for total lead analyses using USEPA Test Method 6010. The analytical results of total lead analysis are summarized in Table 4. Results were reported in milligram (mg) per wipe. All results were reported as less than the detection limit of 10 mg per wipe. Complete analytical laboratory reports are included on compact disc in Appendix C.

3.5 Miscellaneous Soil Sampling Results

Two composite soil samples were collected from the western and the eastern ends of the southern portion of the range floor. These two samples were analyzed for total lead using USEPA Test Method 6010B.

A concrete pipe located in the northeast portion of the range floor used for rifle shooting was removed. On April 21, 2008, a composite soil sample was collected and analyzed for total lead using USEPA Test Method 6010. The sample identification used was COT-PIPE-01.

The results obtained from the above three composite samples are also presented in Table 4. None of these soil samples contained concentrations of lead above the rSRL of 400 milligrams per kilogram (mg/Kg).

3.6 Air Sampling

During O&M activities, a total of 15 daily personal air filter samples were collected and submitted to Turner Laboratories for total lead analyses using USEPA Test Method 6010. Analytical laboratory reports are included on compact disc in Appendix C. None of the 15 air samples contained detectable concentrations of total lead.

3.7 Quality Assurance/Quality Control

Field quality assurance/quality control (QA/QC) samples collected during the O&M project consisted of duplicate samples. Brown and Caldwell Constructors collected duplicate samples at a frequency of 1 per 10 field samples collected, excluding the lead wipe samples collected in the armory building. Duplicate samples were collected in the same manner as original samples and analyzed for the same parameters.

Turner prepared and analyzed several types of QA/QC samples, including method blanks, laboratory control samples (LCS), surrogate spike analyses, matrix spike/matrix spike duplicate (MS/MSD) samples, and check standards. Results of these QA/QC samples analyses are included with the analytical laboratory reports provided on compact disc in Appendix C.

3.8 Data Verification and Validation

The verification and validation of data generated during this O&M effort was performed in a manner that is consistent with industry standards. Upon receipt of complete and final analytical reports from the laboratory, Brown and Caldwell Constructors performed a Level II data review on 100 percent of the soil clearance sample results.

At a minimum, the following activities were performed:

- Comparison of primary and field duplicate samples analytical results.
- Evaluation of detections in blank samples.
- Evaluation of matrix spike recoveries.
- Evaluation of laboratory control samples.
- Evaluation of surrogate spike analyses.

The acceptance criteria applied during evaluation of the analytical data and the results of the evaluation are provided below:

- **Comparison of primary and field duplicate samples analytical results:** The relative percent difference (RPD) for each analyte should be ± 50 percent. Four of the 6 duplicate treatment confirmation samples collected exceeded the 50 percent RPD limit.
 - Duplicate sample COT-B-DUP01 (associated with sample COT-BPB-C, Table 1) exceeded the RPD for all 4 metals and ranged from 58 percent to 150 percent. These elevated RPD values may be the result of variability between the samples collected due to the variability of site conditions. These two samples contained very high concentrations of metals, significantly higher than the rSRLs; therefore, the data is deemed acceptable.
 - Duplicate sample COT-DUP03 (associated with COT-BSB-BS-C-06, Table 1) exceeded the RPD for lead (60 percent). The detected concentrations were very low and significantly lower than the rSRL of 400 mg/Kg; therefore, the data is deemed acceptable.
 - Duplicate sample COT-DUP04 (associated with COT-RF-07, Table 3) was analyzed for all 4 metals but only antimony slightly exceeded the RPD (51 percent). The RPD for the three other metals associated with this sample ranged from 7 to 35 percent. The slight exceedance for antimony is attributed to soil variations in the sample collected. These two samples contained very high concentrations of metals, significantly higher than the rSRLs; therefore, the data is deemed acceptable.
 - Duplicate sample COT-DUP06 (associated with COT-RF-07+06, Table 3) was analyzed for three metals. Only lead had a slight RPD exceedance of 52 percent. The RPD for the other two analytes were 0 to 4 percent. The exceedance for lead is attributed to variation within the samples, and both concentrations were well below the rSRL. Therefore, the data is deemed acceptable.
- **Evaluation of detections in blank samples:** No analytes should be detected in the method blanks at concentrations greater than their respective practical quantitation limits (PQLs). Lead and antimony were detected in one of the method blanks. Concentrations were very low and were flagged appropriately by Turner Laboratories.

- **Evaluation of MS recoveries:** The recovery rate should be between 75 and 125 percent. Turner Laboratories properly “flagged” any analytical results where the MS recovery rate was outside the above limits.
- **Evaluation of laboratory control samples:** The RPD between the LCS and the LCSD should not exceed 20 percent. Turner Laboratories properly “flagged” any analytical results where the RPD between the LCS and the LCSD was outside the above limits.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the clearance samples analytical results obtained during the O&M activities, Brown and Caldwell Constructors has the following conclusions:

1. The EcoBond® treatment process was effective in reducing the leachability of lead to below the TC limit of 5.0 mg/L, allowing approximately 1,083 CY of treated material to be disposed as non-hazardous waste at the Los Reales Landfill.
2. The surface soil secondary berm, primary backstop, and range floor samples analytical results confirmed that the concentrations of total lead, antimony, arsenic, and copper remaining at the Site following O&M activities are below their respective rSRLs.
3. The armory building lead wipe samples indicate that the interior walls have not been adversely impacted by lead resulting from prior site activities.
4. The air samples analytical results indicate that the dust control measures implemented during the conduct of the O&M activities were effective in preventing the off-site migration of lead within fugitive dust.

Based on the findings and results of the O&M activities, the Site can continue to be used as a firing range or be redeveloped without any environmental restrictions associated with the COCs addressed in this report. No other COCs beyond those associated with the firing range operations were addressed in this report.

5. REFERENCES

- Brown and Caldwell, 2008. *Silverbell Firing Range Operations and Maintenance Work Plan*. Prepared for the City of Tucson. March 25, 2008.
- USEPA, 2002. *EPA Guidance for Quality Assurance Project Plans*. USEPA/QA/G-5, EPA/600/R-98/018. December, 2002.
- Metals Treatment Technologies, 2008. *City of Tucson Silverbell Firing Range Operations & Maintenance Report*. Prepared for: Brown and Caldwell. May 2008.

TABLES

Table 1. Baseline Sampling Analytical Results

Sample ID	Sample Date	Analyte (mg/Kg)				Comments
		Lead	Antimony	Arsenic	Copper	
Secondary Berm - Baseline						
COT-BSB-NS-E	3/24/2008	53	--	--	--	East end of Secondary berm, near surface
COT-BSB-NS-EC	3/24/2008	49	<10	4.0J	29	East central location of Secondary berm, near surface
COT-BSB-NS-C	3/24/2008	350	--	--	--	Central location of Secondary berm, near surface
COT-BSB-NS-WC	3/24/2008	66	<10	5.0J	36	West central location of Secondary berm, near surface
COT-BSB-NS-W	3/24/2008	15,000	--	--	--	West end of Secondary berm, near surface
Primary Berm - Baseline						
COT-BPB-E	3/24/2008	6700	--	--	--	East end of Primary berm, near surface
COT-BPB-EC	3/24/2008	23,000	160	14	19,000	East central location of Primary berm, near surface
COT-BPB-C	3/24/2008	6,200	46	12	390	Central location of Primary berm, near surface
COT-B-DUP01	3/24/2008	32,000	320	24	710	Duplicate sample associated with COT-BPB-C
COT-BPB-WC	3/24/2008	29,000	--	--	--	West central location of Primary berm, near surface
COT-BPB-W	3/24/2008	2,700	--	--	--	West end of Primary berm, near surface
Range Floor - Baseline						Each sample is composite of 3 subsamples
COT-BRF-NW	3/24/2008	1,100	9.0J	7.6	89	Collected from northwest quadrant
COT-BRF-SW	3/24/2008	560	--	--	--	Collected from southwest quadrant
COT-BRF-SE	3/24/2008	34,000	--	--	--	Collected from southeast quadrant
COT-BRF-NE	3/24/2008	25,000	730	72	110	Collected from northeast quadrant
Basal Layer of Secondary Berm						
COT-BSB-BS-W-06	4/21/2008	20	<10	4.0J	29	West end trench, ~6" above base of berm
COT-BSB-BS-W-18	4/21/2008	63	<10	4.0J	33	West end trench, ~18" above base of berm
COT-BSB-BS-W-30	4/21/2008	26	<10	3.0J	21	West end trench, ~30" above base of berm
COT-BSB-BS-E-06	4/21/2008	20	<10	4.0J	28	Central trench, ~6" above base of berm
COT-BSB-BS-E-18	4/21/2008	28	<10	4.0J	31	Central trench, ~18" above base of berm
COT-BSB-BS-E-30	4/21/2008	25	<10	5.0J	24	Central trench, ~30" above base of berm
COT-BSB-BS-C-06	4/21/2008	24	<10	4.0J	22	West end trench, ~6" above base of berm
COT-DUP03	4/21/2008	45	<10	5.3	26	Duplicate sample associated with COT-BSB-BS-C-06
COT-BSB-BS-C-18	4/21/2008	23	<10	4.0J	20	West end trench, ~18" above base of berm
COT-BSB-BS-C-30	4/21/2008	23	<10	4.0J	22	West end trench, ~30" above base of berm
r-SRL		400	31	10	3100	

Note:

All samples collected prior to excavation work being conducted at the Site.

mg/Kg - milligram per Kilogram

-- not analyzed for target analyte

< - result is not detected. Value shown is reporting limit.

J - laboratory data flag indicating analyte detected below quantitation limit

r-SRL - residential Soil Remediation Level

Results in **Bold** exceed the r-SRL

Table 2. MT² TCLP Treatment Confirmation Results

Sample ID	Sample Date	Mercury	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Comment
		mg/L								
SB0417-01	4/17/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Secondary berm
TCLP-0417-02	4/17/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Primary berm
TCLP-0418-03	4/18/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor
TCLP-0418-04	4/18/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor
TCLP-0423-05	4/23/2008	<0.0010	<1.0	<10	<0.50	<1.0	1.1	<0.50	<2.0	Primary berm
COT-TSP1-0425-06	4/25/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Stockpile 1
COT-TSP1-0425-07	4/25/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Stockpile 1
COT-TSP1-0425-08	4/25/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Stockpile 1
COT-TSP1-0425-09	4/25/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Stockpile 1
COT-TSP2-0425-10	4/25/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Stockpile 2
TCLP-0428-11	4/28/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor, second lift
TCLP-0428-12	4/28/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor, second lift
TCLP-0428-13	4/28/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor, second lift
TCLP-0428-14	4/28/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor, second lift
TCLP-0428-15	4/28/2008	<0.0010	<1.0	<10	<0.50	<1.0	<1.0	<0.50	<2.0	Range floor, second lift
TC Limit		0.2	5.0	100.0	1.0	5.0	5.0	1.0	5.0	

Notes:

MT2 - Metals Treatment Technologies

TCLP - toxicity characteristic leaching procedure

mg/L - milligram per Liter

< - result is not detected. Value shown is reporting limit.

Table 3. Soil Clearance Sampling Analytical Results

Sample ID	Sample Date	Analyte (mg/Kg)					Comment
		XRF	Lead	Antimony	Arsenic	Copper	
Secondary Berm - Clearance Samples							
COT-SB-01	4/16/2008	42	41	--	--	--	Top of secondary berm, ~0' from east end
COT-SB-02	4/16/2008	42	21	<10	5.0J	26	Top of secondary berm, ~30' from east end
COT-SB-03	4/16/2008	69	46	--	--	--	Top of secondary berm, ~60' from east end
COT-SB-04	4/16/2008	46	20	--	--	--	Top of secondary berm, ~90' from east end
COT-SB-05	4/16/2008	123	7800	150	5.8	130	Top of secondary berm, ~120' from east end
COT-SB-05+03	4/25/2008	136	64	<10	--	--	Sample collected from COT-SB-05 location after additional 3" removed
COT-DUP05	4/25/2008	126	76	<10	--	--	Duplicate sample associated with COT-SB-05+03
COT-SB-06	4/16/2008	51	41	--	--	--	Top of secondary berm, ~150' from east end
COT-SB-07	4/16/2008	51	26	<10	4.0J	33	Top of secondary berm, ~180' from east end
COT-SB-08	4/16/2008	91	23	--	--	--	Top of secondary berm, ~210' from east end
Primary Berm - Clearance Samples							
COT-PB-01	4/17/2008	1000	15	--	--	--	Face of primary berm, ~21.5' from east end
COT-PB-02	4/17/2008	437	1500	<10	7.1	39	Face of primary berm, ~43' from east end
COT-PB-02+06	4/25/2008	16	22	--	--	--	Sample collected from COT-PB-02 location after additional 6" removed
COT-PB-03	4/17/2008	209	1700	--	--	--	Face of primary berm, ~64.5' from east end
COT-PB-03+06	4/25/2008	28	15	--	--	--	Sample collected from COT-PB-03 location after additional 6" removed
COT-PB-04	4/17/2008	28	11	<10	5.8	11	Face of primary berm, ~86' from east end
COT-DUP02	4/17/2008	19	8.0J	<10	6.3	12	Duplicate sample associated with COT-PB-04
COT-PB-05	4/17/2008	23	9.0J	--	--	--	Face of primary berm, ~107.5' from east end
COT-PB-06	4/17/2008	7427	5000	43	8.1	180	Face of primary berm, ~129' from east end
COT-PB-06+06	4/25/2008	47	87	<10	6.3	--	Sample collected from COT-PB-06 location after additional 6" removed
COT-PB-07	4/17/2008	18	10	--	--	--	Face of primary berm, ~150.5' from east end
COT-PB-08	4/17/2008	15	15	--	--	--	Face of primary berm, ~172' from east end
Range Floor - Clearance Samples							
COT-RF-01	4/21/2008	268	480	--	--	--	Southeast quadrant, southwest corner
COT-RF-01+03	5/1/2008	110	47	--	--	--	Sample collected from COT-RF-01 location after additional 3" removed
COT-RF-02	4/21/2008	144	84	--	--	--	Southeast quadrant, central on east side
COT-RF-03	4/21/2008	302	11000	190	14	110	Southeast quadrant, central on north half
COT-RF-03+06	5/1/2008	73	31	<10	7.9	--	Sample collected from COT-RF-03 location after additional 6" removed
COT-RF-04	4/21/2008	451	590	--	--	--	Northeast quadrant, southeast corner
COT-RF-04+06	5/1/2008	50	22	--	--	--	Sample collected from COT-RF-04 location after additional 6" removed
COT-RF-05	4/21/2008	217	430	--	--	--	Northeast quadrant, southwest corner
COT-RF-05+06	5/1/2008		22	--	--	--	Sample collected from COT-RF-05 location after additional 6" removed
COT-RF-06	4/21/2008	3027	6500	80	57	120	Northeast quadrant, northeast corner
COT-RF-06+06	5/1/2008	55	21	<10	7.1	--	Sample collected from COT-RF-06 location after additional 6" removed

Table 3. Soil Clearance Sampling Analytical Results

Sample ID	Sample Date	Analyte (mg/Kg)					Comment
		XRF	Lead	Antimony	Arsenic	Copper	
COT-RF-07	4/21/2008	4617	29,000	500	130	260	Northwest quadrant, north central
COT-DUP04	4/21/2008		27,000	840	150	370	Duplicate sample associated with COT-RF-07
COT-RF-07+06	5/1/2008		63	<10	7.5	--	Sample collected from COT-RF-07 location after additional 6" removed
COT-DUP06	5/1/2008		37	<10	7.8	--	Duplicate sample associated with COT-RF-07+06
COT-RF-08	4/21/2008	246	260	--	--	--	Northwest quadrant, southeast corner
COT-RF-09	4/21/2008	146	120	--	--	--	Northwest quadrant, central on west side
COT-RF-10	4/21/2008	211	160	<10	5	110	Southwest quadrant, central on north side
COT-RF-11	4/21/2008	141	200	--	--	--	Southwest quadrant, southeast corner
COT-RF-12	4/21/2008	102	4900	--	--	--	Southwest quadrant, northwest corner
COT-RF-12+03	5/1/2008		22	--	--	--	Sample collected from COT-RF-12 location after additional 3" removed
r-SRL			400	31	10	3100	

Notes:

mg/Kg - milligram per Kilogram

XRF - x-ray fluorescence

-- not analyzed for target analyte

< - result is not detected. Value shown is reporting limit.

J - laboratory data flag indicating analyte detected below quantitation limit

r-SRL - residential Soil Remediation Level

Results in **Bold** exceed the r-SRL

Table 4. Armory Building and Miscellaneous Analytical Results

Sample ID	Sample Date	Units	Lead	Comments
Armory Building - Interior Lead Wipe Samples				
COT-AB-0429-01	4/29/2008	mg/wipe	<10	West wall, south of door
COT-AB-0429-02	4/29/2008	mg/wipe	<10	North wall, west of window
COT-AB-0429-03	4/29/2008	mg/wipe	<10	East wall, middle
COT-AB-0429-04	4/29/2008	mg/wipe	<10	South wall, west side below vent
COT-AB-0429-05	4/29/2008	mg/wipe	<10	West wall, south end
COT-AB-0429-06	4/29/2008	mg/wipe	<10	West wall near corner with north wall
COT-EB042908LT	4/29/2008	mg/wipe	<10	Equipment blank of 10 cm ² template
COT-EB042908LW	4/29/2008	mg/wipe	<10	Equipment blank for gauze wipe
Range Floor - Behind Main Area				
COT-RF-BW	5/2/2008	mg/Kg	110	Area south of main range floor - west side
COT-RF-BE	5/2/2008	mg/Kg	96	Area south of main range floor - east side
Rifle Tunnel				
COT-PIPE-01	4/21/2008	mg/Kg	37	sample collected from behind pipe tunnel on east side

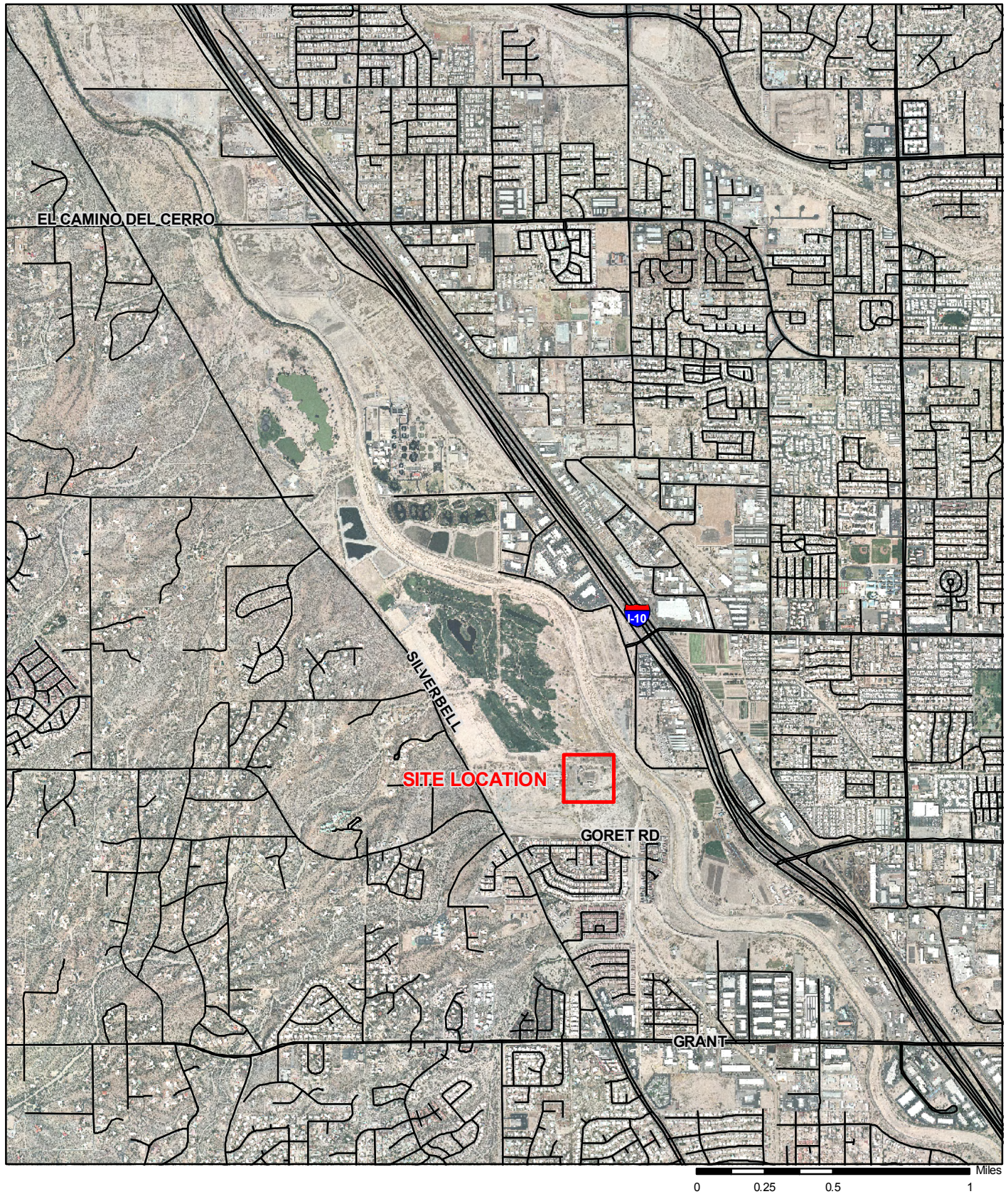
Notes:

mg/Kg - milligram per Kilogram

mg/wipe - milligram per gauze wipe

< - result is not detected. Value shown is reporting limit.

FIGURES



BROWN AND
CALDWELL

Figure 1
SITE LOCATION MAP
SILVERBELL FIRING RANGE
3200 N SILVERBELL RD
CITY OF TUCSON



BROWN AND
CALDWELL

Figure 2
SITE OVERVIEW MAP
SILVERBELL FIRING RANGE
3200 N SILVERBELL RD
CITY OF TUCSON



COT-SB-06	
4/16/2008	
Pb	41

COT-SB-07	
4/16/2008	
Pb	26
Sb	<10
As	4.0J
Cu	33

COT-SB-08	
4/16/2008	
Pb	23

COT-SB-05		COT-SB-05+03	COT-DUP05
4/16/2008		4/25/2008	4/25/2008
Pb	7800	64	76
Sb	150	<10	<10
As	5.8	--	--
Cu	130	--	--

COT-SB-04	
4/16/2008	
Pb	20

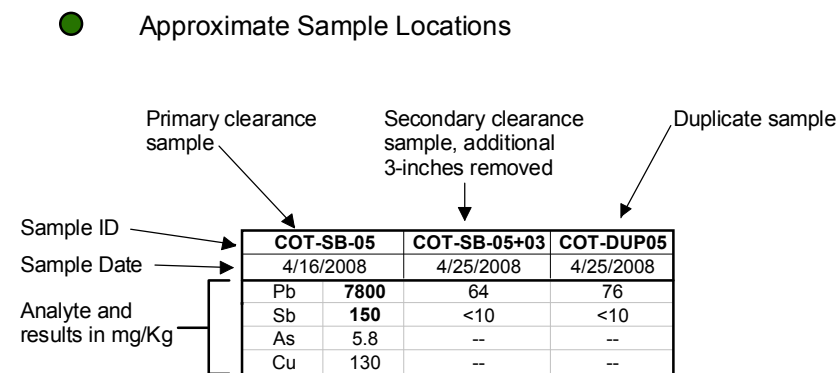
COT-SB-03	
4/16/2008	
Pb	46

COT-SB-02	
4/16/2008	
Pb	21
Sb	<10
As	5.0J
Cu	26

COT-SB-01	
4/16/2008	
Pb	41



EXPLANATION



NOTES

1. All results in milligrams per Kilogram (mg/Kg).
2. 3-inches were removed from Secondary Berm initially.
An additional 3-inches removed near COT-SB-05 due to exceedance in primary clearance sample. All clearance samples were collected 0 to 3-inches below exposed surface.
3. Results in **Bold** exceed the residential soil remediation level (r-SRL).

-- Not analyzed
J - Analyte detected below quantitation limit
Pb - Lead (r-SRL = 400mg/Kg)
Sb - Antimony (r-SRL = 31mg/Kg)
As - Arsenic (r-SRL = 10mg/Kg)
Cu - Copper (r-SRL = 3100mg/Kg)

BROWN AND
CALDWELL

Figure 3
SECONDARY BERM
CLEARANCE SAMPLES
SILVERBELL FIRING RANGE
3200 N SILVERBELL RD
CITY OF TUCSON



COT-PB-06		COT-PB-06+06	
4/17/2008		4/25/2008	
Pb	5000		87
Sb	43		<10
As	8.1		6.3
Cu	180		--

COT-PB-07	
4/17/2008	
Pb	10

COT-PB-08	
4/17/2008	
Pb	15

COT-PB-05	
4/17/2008	
Pb	9.0J

COT-PB-04		COT-DUP02	
4/17/2008		4/17/2008	
Pb	11		8.0J
Sb	<10		<10
As	5.8		6.3
Cu	11		12

COT-PB-03		COT-PB-03+06	
4/17/2008		4/25/2008	
Pb	1700	Pb	15

COT-PB-02		COT-PB-02+06	
4/17/2008		4/25/2008	
Pb	1500		22
Sb	ND		--
As	7.1		--
Cu	39		--

COT-PB-01	
4/17/2008	
Pb	15

EXPLANATION

● Approximate Sample Locations

Primary clearance sample

Secondary clearance sample, additional 6-inches removed

Sample ID

Sample Date

Analyte and results in mg/Kg

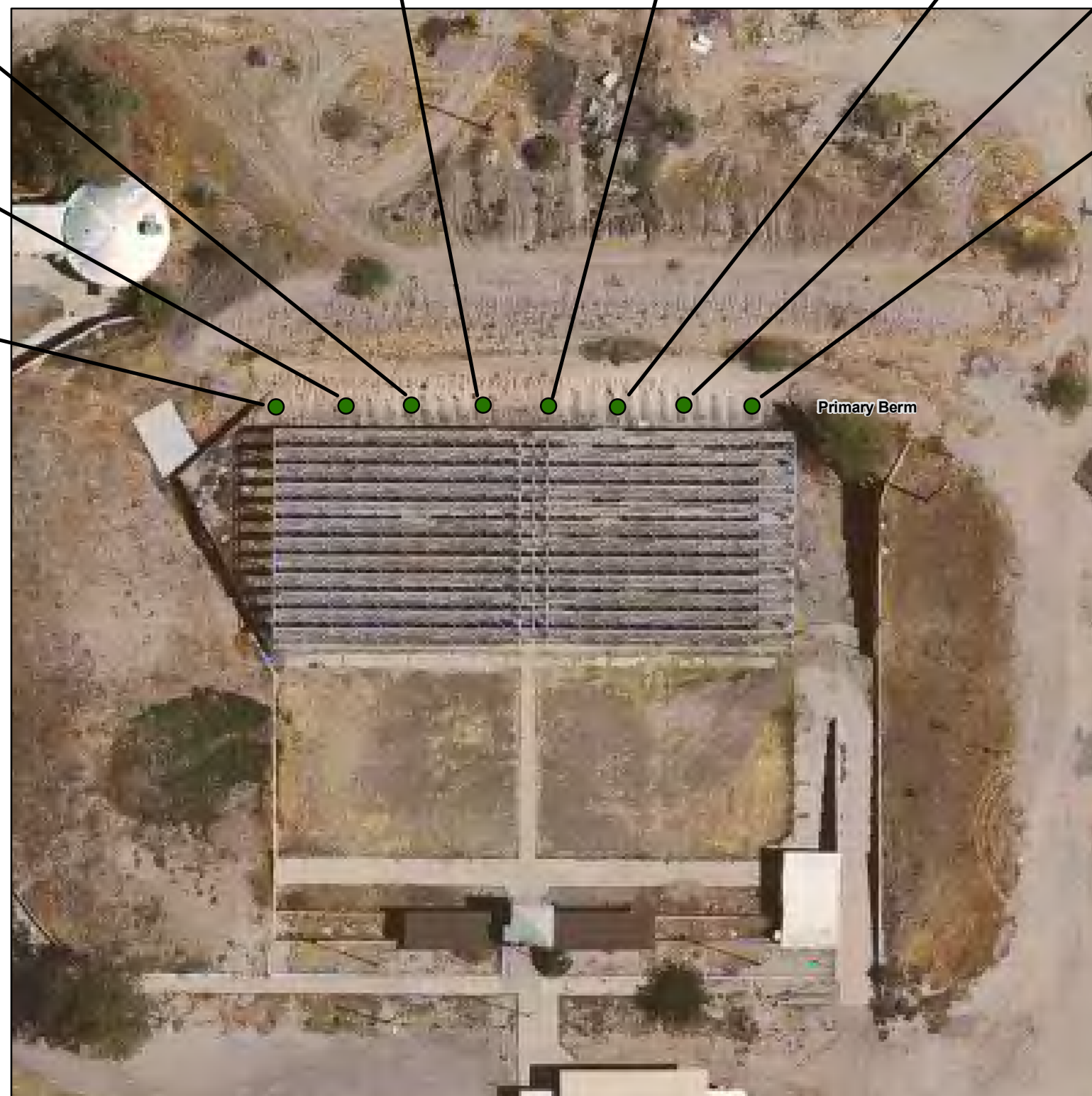
COT-PB-02		COT-PB-02+06	
4/17/2008		4/25/2008	
Pb	1500		22
Sb	ND		--
As	7.1		--
Cu	39		--

NOTES

1. All results in milligrams per Kilogram (mg/Kg).
2. From 0 to 50 feet from east side of the Primary Berm, 1-foot of material was removed. From 50 to 200 feet, 1.5-feet was removed. Areas where primary clearance sample exceeded rSRLs, an additional 6-inches was removed. All clearance samples were collected 0 to 3-inches below exposed surface.
3. Results in **Bold** exceed the residential soil remediation level (r-SRL).

-- Not analyzed
J - Analyte detected below quantitation limit
Pb - Lead (r-SRL = 400mg/Kg)
Sb - Antimony (r-SRL = 31mg/Kg)
As - Arsenic (r-SRL = 10mg/Kg)
Cu - Copper (r-SRL = 3100mg/Kg)

BROWN AND
CALDWELL



0 50 100 Feet

Figure 4
PRIMARY BERM
CLEARANCE SAMPLES
SILVERBELL FIRING RANGE
3200 N SILVERBELL RD
CITY OF TUCSON



COT-RF-07	COT-DUP04	COT-RF-07+06	COT-DUP06
4/21/2008	4/21/2008	5/1/2008	5/1/2008
Pb	29,000	27,000	63
Sb	500	840	<10
As	130	150	7.5
Cu	260	370	--

COT-RF-05	COT-RF-05+06
4/21/2008	5/1/2008
Pb	430
	22

COT-RF-06	COT-RF-06+06
4/21/2008	5/1/2008
Pb	6500
Sb	80
As	57
Cu	120

COT-RF-04	COT-RF-04+06
4/21/2008	5/1/2008
Pb	590
	22

EXPLANATION

● Approximate Sample Locations

Additional 3-inches Removed

Additional 6-inches Removed

Primary clearance sample
Secondary clearance sample, additional 6-inches removed

Sample ID	COT-RF-06	COT-RF-06+06
Sample Date	4/21/2008	5/1/2008
Analyte and results in mg/Kg	Pb 6500	21
	Sb 80	<10
	As 57	7.1
	Cu 120	--

NOTES

1. All results in milligrams per Kilogram (mg/Kg).
2. Initially, 6-inches was removed from the Range Floor. Additional soil was removed based on primary clearance sample results, as indicated by shading. All clearance samples were collected 0 to 3-inches below exposed surface.
3. Results in **Bold** exceed the residential soil remediation level (r-SRL).

-- Not analyzed
J - Analyte detected below quantitation limit
Pb - Lead (r-SRL = 400mg/Kg)
Sb - Antimony (r-SRL = 31mg/Kg)
As - Arsenic (r-SRL = 10mg/Kg)
Cu - Copper (r-SRL = 3100mg/Kg)

COT-RF-12	COT-RF-12+03
4/21/2008	5/1/2008
Pb	4900
	22

COT-RF-10
4/21/2008
Pb 160
Sb <10
As 5
Cu 110

COT-RF-09
4/21/2008
Pb 120

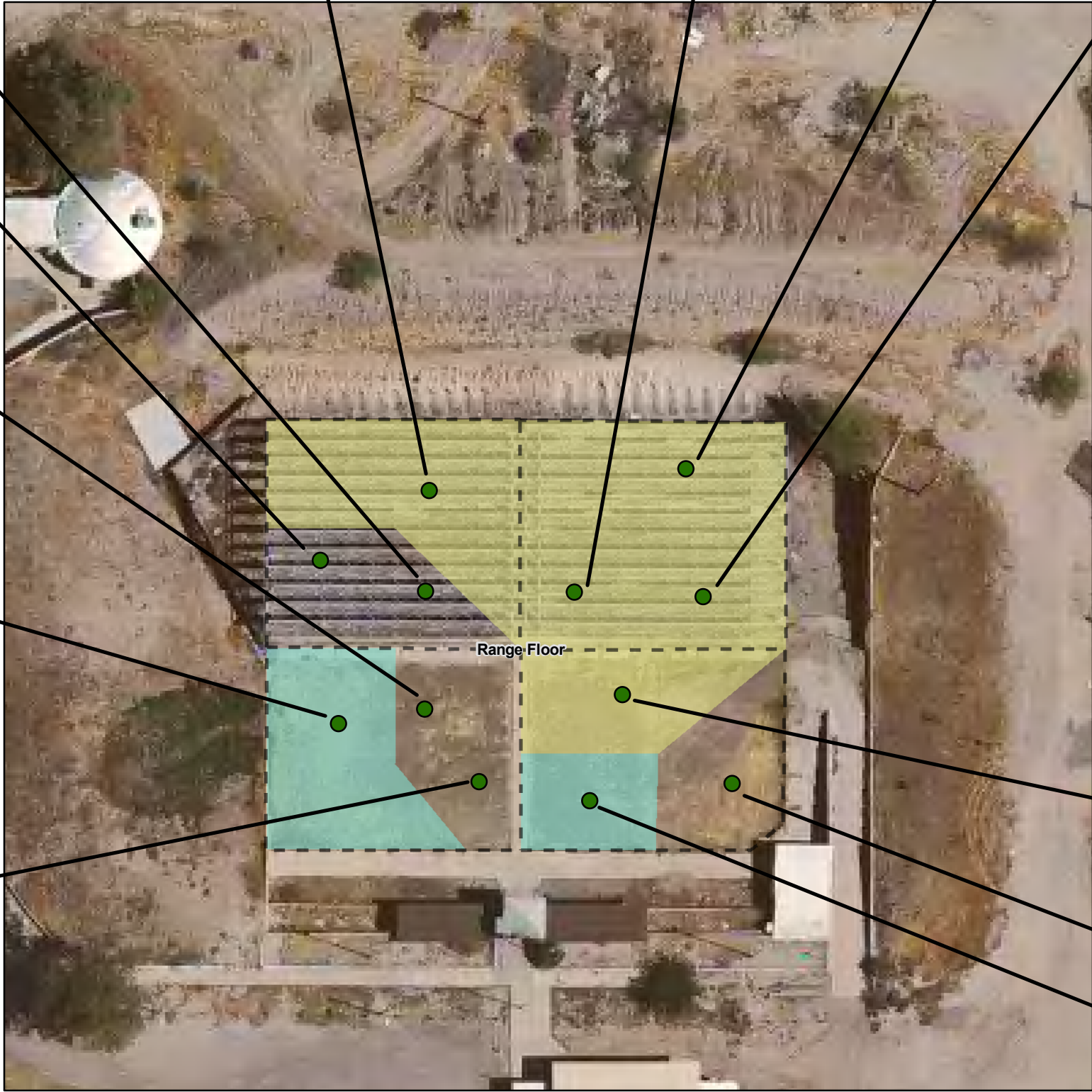
COT-RF-08
4/21/2008
Pb 260

COT-RF-11
4/21/2008
Pb 200

COT-RF-03	COT-RF-03+06
4/21/2008	5/1/2008
Pb	11000
Sb	190
As	14
Cu	110

COT-RF-02
4/21/2008
Pb 84

COT-RF-01	COT-RF-01+03
4/21/2008	5/1/2008
Pb	480
	47



BROWN AND
CALDWELL

0 50 100 Feet

Figure 5
RANGE FLOOR
CLEARANCE SAMPLES
SILVERBELL FIRING RANGE
3200 N SILVERBELL RD
CITY OF TUCSON

APPENDIX A

Copy of Public Notice



CITY OF
TUCSON

ENVIRONMENTAL
SERVICES

April 8, 2008

Notice of Maintenance Activities - 3200 N. Silverbell Road, Tucson, AZ

Dear Residents:

During April 2008, the City of Tucson Environmental Services Department will be conducting maintenance activities at the firing range located adjacent to the closed Silverbell Landfill (see attached map). This range was recently used by the U.S. Customs and Border Protection and other Federal agencies. The City has contracted with Brown and Caldwell to oversee the excavation, transportation, and off-site disposal of metals, miscellaneous materials, and soil from the firing range.

The City plans to recycle metals recovered from the firing range backstop area, and treat and remove soil that may have residual metals concentrations. The area will be tested to ensure that remaining soil meets residential soil clean-up levels established by the Arizona Department of Environmental Quality (ADEQ).

Operations and maintenance activities are scheduled to begin the week of April 14, 2008. Work hours will be from 7 a.m. until 6 p.m., Monday through Friday. The work is not expected to take longer than two to three weeks.

All work will be conducted in accordance with all applicable Federal, State, and local regulations. The only potential impact to neighborhood activities may be additional truck traffic on Silverbell Road.

If you have any questions regarding this notice or planned maintenance activities, please contact Richard M. Byrd or Randy Bauer at the addresses provided below.

Richard M. Byrd
Lead Hydrologist
City of Tucson, Environmental Services
P.O. Box 27210
Tucson, AZ 85726-7210
(Tel) 520-791-5414 (Fax) 520-791-5417
richard.byrd@tucsonaz.gov

Randy D. Bauer
Supervising Hydrogeologist
Brown and Caldwell
201 E. Washington Street, Suite 500
Phoenix, AZ 85004
(Tel) 602-567-3860 (Fax) 602-567-4001
rbauer@brwncald.com

Very truly yours,

Andrew H. Quigley
Director

AHQ/RB/dg





CITY OF
TUCSON

ENVIRONMENTAL
SERVICES

Abril 8, 2008

Aviso de actividades de mantenimiento - 3200 N. Silverbell Road, Tucson, AZ

Estimados residentes:

Durante el mes de Abril, 2008, el Departamento de Servicios Ambientales de la Ciudad de Tucson realizará actividades de mantenimiento al campo de tiro localizado junto al cerrado Basurero Silverbell (ver mapa anexo). Este campo fue utilizado recientemente por el Servicio de Aduanas y Protección Fronteriza de los Estados Unidos y por otras dependencias federales. La Ciudad ha contratado a la empresa Brown and Caldwell para que supervise la excavación, transporte y disposición en otro sitio de metales, materiales misceláneos y suelo del campo de tiro.

La Ciudad planea reciclar los metales que se recuperen de los bordos del campo de tiro, así como tratar o remover el suelo que pueda tener residuos de concentración de metales. El área será probada para asegurar que el suelo que quede cumpla con los requisitos para limpieza de suelos residenciales establecidos por el Departamento de Calidad Ambiental de Arizona (ADEQ).

Se tiene programado iniciar las operaciones y actividades de mantenimiento la semana del 14 de Abril, 2008. Las horas de trabajo serán de las 7 a.m. hasta las 6 p.m., de Lunes a Viernes. Se espera que el trabajo tenga una duración de dos a tres semanas.

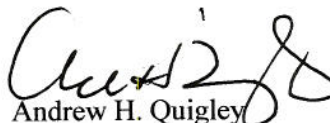
Todo el trabajo se realizará de acuerdo a las disposiciones Federales, Estatales y locales aplicables. El único impacto potencial a las actividades de la vecindad pudiera ser tráfico adicional de camiones en Silverbell Road.

Si Usted tiene alguna pregunta relative a este aviso o a las actividades de mantenimiento programadas, por favor comuníquese con Richard M. Byrd o con Randy Bauer a las direcciones que se indican a continuación:

Richard M. Byrd
Lead Hydrologist
City of Tucson, Environmental Services
P.O. Box 27210
Tucson, AZ 85726-7210
(Tel) 520-791-5414, (Fax) 520-791-5417
richard.byrd@tucsonaz.gov

Randy D. Bauer
Supervising Hydrogeologist
Brown and Caldwell
201 E. Washington Street, Suite 500
Phoenix, AZ 85004
(Tel) 602-567-3860 (Fax) 602-567-4001
rbauer@brwnncald.com

Muy sinceramente suyo,


Andrew H. Quigley
Director

AHQ/RB/dg



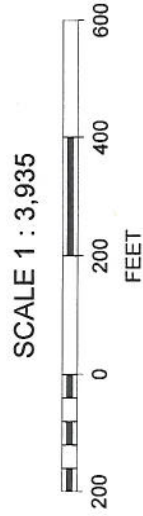
City of Tucson Silverbell Firing Range Location Map

Streets

- Streets - All
- Streets - Major - With Names
- Street Names

All Color Orthophoto Imagery

- 4 Foot Resolution - All Color



Firing Range

APPENDIX B

MT² Report

(provided in a separate 3-ring binder)

City of Tucson Silverbell Firing Range Operations & Maintenance Final Report

Prepared For:

Brown & Caldwell

Tucson, AZ

May 2008



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APPENDIX B – LABORATORY REPORTS
APPENDIX C – LANDFILL SUMMARY
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APPENDIX F – SITE PHOTOGRAPHS
APPENDIX G – ECOBOND® MSDS

1.0 INTRODUCTION

This Range Operation & Maintenance (O&M) Final Report is for on-site treatment of lead impacted soil at the City of Tucson Silverbell Firing Range site with MT2 proprietary ECOBOND[®] treatment to stabilize the lead in the soil to meet the RCRA criteria of 5.0mg/L leachable lead. As part of the treatment process, all 8 RCRA metals were verified to be below the RCRA TCLP criteria. The soil was treated with ECOBOND[®], sampled to confirm treatment to below RCRA TCLP metals criteria, and transported and disposed of at the City of Tucson, Los Reales Landfill. The range soils from the Primary Backstop, the Range Floor, and Range Side Slope Areas, were screened for the recovery of bullets and bullet fragments. Due to the presence of many bullet sized rocks, bullet recovery for recycling was not economically feasible. Screened bullet piles were treated with ECOBOND[®] and transported and disposed of at the Los Reales Landfill. All impact berms, the range floor, and side slope areas were returned to their original usable conditions after the aforementioned Range Operation & Maintenance.

2.0 SITE HISTORY AND CURRENT CONDITIONS

The City of Tucson Silverbell Firing Range is located at 3200 N Silverbell Road, Tucson, AZ. The range has been in use for approximately 40 years. The range consists of approximately 30 shooting positions from which targets can be engaged from distances of seven yards to fifty yards. All rounds are fired into the Primary Backstop. The Secondary Berm is a safety berm, with no rounds being fired directly into the berm. A small Rifle Tube is located on the east end of the range and is used for occasional rifle test firing.

3.0 TREATABILITY STUDY

In July of 2007, Brown & Caldwell personnel collected representative composite samples of soil from the Primary Backstop and Range Floor. These samples represented a “worst case” scenario with regards to the highest expected concentrations of lead (Pb). At the MT2 laboratory, the samples were analyzed and treated with ECOBOND[®] to determine the appropriate level of treatment necessary at the Silverbell Firing Range. As reported in the MT2 Treatability Study, TCLP Pb concentrations dropped by at least 90% after treatment to below the RCRA TCLP Pb Criteria of 5.0mg/L. ECOBOND treatment is a permanent treatment with Multiple Extraction Procedure testing of treated soil remaining below the RCRA TCLP criteria for more than 10 extractions, or more than 1000 years of landfill acid rain leaching. MT2 applied approximately 1%, by weight, ECOBOND[®] Pb to the soil at the Silverbell Firing Range. Treatment was performed from April 16 to 28, 2008.

See Appendix A for the MT2 Treatability Study.

4.0 SOIL SAMPLING AND ANALYSIS

MT2 was responsible for only the sampling of ECOBOND® treated soil at the Silverbell Firing Range. Treated soil was sampled according to the Brown & Caldwell “*Work Plan Silverbell Firing Range Operations and Maintenance*” March 25, 2008.

Table 4.1 lists the soil stabilization confirmation samples, sampling locations, treatment volumes, and laboratory results.

Table 4.1

Sample ID	Date Sampled	Area Sampled	Cubic Yards	TCLP Pb (mg/L)
SB-0417-01	4/17/08	Secondary Berm Top & Front	58	<1.0
TCLP-0417-02	4/17/08	Primary Berm Face – 1 st Lift	257	<1.0
TCLP-0418-03	4/18/08	Range Floor Under Canopy – 1 st Lift	167	<1.0
TCLP-0418-04	4/18/08	Range Floor, south End – 1 st Lift	167	<1.0
TCLP-0423-05	4/23/08	East & West side Areas of Range floor; Primary & Secondary Berm additional areas	85	1.1
COT-TSP1-0425-06	4/25/08	Treated and screened stockpile	146	<1.0
COT-TSP1-0425-07	4/25/08	Treated and screened stockpile	146	<1.0
COT-TSP1-0425-08	4/25/08	Treated and screened stockpile	146	<1.0
COT-TSP1-0425-09	4/25/08	Treated and screened stockpile	146	<1.0
COT-TSP1-0425-10	4/25/08	Treated and screened stockpile	146	<1.0
TCLP-0428-11	4/28/08	SE & SW Quadrants of Range Floor	89	<1.0
TCLP-0428-12	4/28/08	NW Quadrant of Range Floor	100	<1.0
TCLP-0428-13	4/28/08	North end of NE quadrant of Range Floor	72	<1.0
TCLP-0428-14	4/28/08	South end of NE quadrant of Range Floor	72	<1.0
TCLP-0428-15	4/28/08	Side slope areas bullet pile	16	<1.0

Note that all soil treatment samples were also analyzed for the remaining 7 RCRA Metals (Arsenic, Barium, Cadmium, Chromium, Mercury, Selenium, and Silver) and all samples were identified as having no TCLP metals concentrations above analytical detection limits for the aforementioned analytes. All treated soil met the RCRA TCLP criteria for all 8 RCRA metals.

See Appendix B for the complete laboratory reports.

Samples COT-TSP1-0425-06 thru -10 were samples collected on the treated and screened soils from the range areas associated with samples SB-0417-01, TCLP-0417-02, TCLP-0418-03, TCLP-0418-04, TCLP-0423-05. Samples COT-TSP1-0425-06 thru -10 were collected to confirm the treatment process.

A total of **1083 cubic yards** of soil from the City of Tucson Silverbell Firing Range was treated with ECOBOND®.

5.0 SITE PREPARATION

Prior to work at the site, an underground utilities locating service marked any service lines or piping. Brown & Caldwell indicated there were no underground utilities in the treatment area.

Site treatment and screening construction equipment:

- Excavator, Track hoe – CAT 320
- 2500-Gallon Water Truck
- Mini Excavator – CAT 305C
- Front End Loader – CAT 950H
- Roadrunner 5x12 Screening Plant

Site preparation included clearing and grubbing of the range floor, and the removal of construction debris consisting mostly of plywood sheets, lumber, and other debris.

6.0 SOIL TREATMENT WITH ECOBOND®

Lead impacted soil stabilization treatment with ECOBOND® was performed at the Silverbell Firing range site from April 17 to April 28, 2008. The lead impacted soil was treated with 16 tons of ECOBOND Pb utilizing a CAT 320 and CAT 305C excavators to mix the soil. Water was applied as required for dust control and treatment. A small portion of ECOBOND (approx one ton) was not used for soil treatment. At the request of the City of Tucson, the remaining one ton of ECOBOND® was left on the site. A total of 1083 cubic yards or 1,521.05 tons of the Silverbell Firing Range soil was treated with ECOBOND®. See Appendix G for ECOBOND MSDS.

7.0 SOIL SCREENING

All treated soil from the Primary Backstop, the first lift of the Range Floor, and the East and West Side Slope Areas of the Silverbell Range were mechanically screened for the removal of bullets and bullet fragments. A Roadrunner 5x12 screening plant with 0.50" and 0.25" screens was used for the soil screening. All bullets, bullet fragments, similar sized rocks, stones, and dirt clods measuring between 0.25" and 0.50" were removed from the soil. The soil at the range contains high concentrations of rocks, stones and dirt clods in this size range and the resulting pile of screened material did not have any commercial value. As tested by the MT2 laboratory, the bullet/lead content of the screened material was approximately 1% to 4% bullets by weight. All screened soil was treated with ECOBOND (either pre or post screening) and transported to the landfill for disposal.

8.0 AIR MONITORING

MT2 performed air cartridge monitoring for total airborne lead. Starting with earthmoving activities on April 16, 2008 MT2 personnel wore air cartridges attached to Gillian GilAir 5 air pumps. Air monitoring was discontinued after 4/23/2008 when the absence of airborne lead was demonstrated by analytical laboratory results.

The following table lists the sample ID, person, location, duration of sampling, and analytical result.

See Appendix B for laboratory air cartridge reports.

Sample ID	Crew Member and Location	Date	Minutes Run	Flow Rate (cc/min)	Pb (mg/filter)
Air #1	J. Miller, loader	4/16/08	390	4	<1
Air #2	B. Taylor, water truck	4/16/08	380	4	<1
Air #3	J. Porter, mini excavator	4/16/08	385	4	<1
Air #4	J. Sod, excavator	4/17/08	530	4	<1
Air #5	B. Taylor, water truck	4/17/08	535	4	<1
Air #6	M. Pokorny, on ground - roaming	4/17/08	540	4	<1
Air #7	J. Porter, loader	4/18/08	480	4	<1
Air #8	B. Taylor, water truck	4/18/08	485	4	<1
Air #9	M. Pokorny, on ground - roaming	4/18/08	490	4	<1
Air #10	M. Pokorny, on ground - roaming	4/21/08	535	4	<1
Air #11	J. Sod, excavator	4/21/08	540	4	<1
Air #12	J. Porter, water truck	4/22/08	540	4	<1
Air #13	M. Pokorny, on ground - roaming	4/22/08	545	4	<1
Air #14	J. Sod, excavator	4/23/08	540	4	<1
Air #15	M. Pokorny, on ground - roaming	4/23/08	545	4	<1

9.0 TRANSPORTATION & DISPOSAL

MT2 retained Ruger's H2O Trucking of Queen Creek, AZ for the transportation of ECOBOND treated non-hazardous soils to the City of Tucson, Los Reales Landfill. On May 1 and 2, 2008, Ruger's utilized seven side dump and end dump trucks to transport 1,521.05 tons of soil to the landfill. Soil weights were verified by the certified scales at the landfill. See Appendix C for the landfill truckload weight totals.

At the request of the City of Tucson, MT2 utilized the Tucson Los Reales Landfill for the disposal of the ECOBOND treated non-hazardous soils from the Silverbell Firing Range. All soil disposed of at the landfill was first characterized as non-hazardous by analytical

testing for RCRA TCLP 8 RCRA metals. All transported Silverbell Firing Range soil samples met the RCRA criteria for all 8 RCRA metals. See Section 4.0 and Appendix B for analytical laboratory sample results.

10.0 PERMITS

MT2 obtained a Notice of Intent (NOI) for stormwater discharges associated with the operations and maintenance activity at the Silverbell Range under the AZDES General Permit. The NOI was issued 03/12/2008, Authorization # AZCON-32665. At the demobilization from the Silverbell Range, MT2 filed a Notice of Termination (NOT) for the site on 05/15/2008. See Appendix D for the NOI and NOT.

MT2 obtained an Air Quality Activity Permit with the Pima County Department of Environmental Quality – Air Program. Permit number 5516 was granted on 03/13/2008. At the demobilization from the Silverbell Range, MT2 filed a Notice of Intent to Terminate Air Quality Activity Permit for the site on 05/15/2008. See Appendix E for the Air Quality Activity Permit and the Notice Of Intent To Terminate.

11.0 SITE CLEANUP, RESTORATION AND DEMOBILIZATION

At the conclusion of range Operations and Maintenance, MT2 demobilized from the Silverbell Firing Range on May 2, 2008. All equipment was removed from the site on May 2, 2008. Site restoration included returning all firing range Backstop and berms to original configuration, wetting and compaction of the range floor and side slope areas, and general site cleanup.

12.0 CONCLUSION

MT2 provided Range Operation & Maintenance (O&M) for the on-site treatment of lead impacted soil at the City of Tucson Silverbell Firing Range site with MT2 proprietary ECOBOND[®] treatment to stabilize the lead in the soil to meet the RCRA TCLP Criteria for all 8 RCRA metals. The soil was treated with ECOBOND[®], sampled to confirm treatment to below RCRA TCLP metals criteria, and transported and disposed of at the City of Tucson, Los Reales Landfill. The range soils from the Primary Berm, the Range Floor, and Range Side Slope Areas, were screened for the recovery of bullets and bullet fragments. Due to the presence of many bullet sized rocks, bullet recovery for recycling was not economically feasible. Screened bullet piles were treated with ECOBOND[®], and transported and disposed of at the Los Reales Landfill. All impact berms, the range floor, and side slope areas were returned to their original usable conditions after the aforementioned Range Operation & Maintenance. A total of 1083 cubic yards, or 1521.05 tons, of treated non-hazardous soil were removed from the Silverbell Firing Range.



Appendix A

Treatability Study

**City of Tucson
Outdoor Firing Range
TREATABILITY REPORT**

**Mark Peters, Ph.D.
MT2 (Metals Treatment Technologies), LLC**

July 6, 2007

This document contains MT² Proprietary and Confidential Information

1.0 OBJECTIVE

The objective of this report is to present the findings of a laboratory treatability study conducted on the City of Tucson Silverbell Firing Range samples by MT2 designed to determine RCRA leachable lead (Pb) concentrations from Pb contaminated samples and to develop a chemical formulation that ensures the Pb remain below the TCLP Pb criteria.

2.0 SAMPLE DESCRIPTION and CHARACTERIZATION

Two samples of Pb contaminated material were delivered to MT2 Sample Receiving. The samples were received in a one-gallon plastic bag. Before analysis, the sample was transferred to a plastic bag and blended to ensure homogeneous sub-sampling. A description of the samples is presented in Table 1.

Table 1. SAMPLE DESCRIPTION and CHARACTERIZATION

MT² Sample #	Client I.D. #	Description
246-1	Primary Berm	Light brown sandy soil with some small rocks.
246-2	Range Floor	Light brown sandy soil with some small rocks.

The material was then tested for hazardous Pb by using EPA's SW-846 Method No. 1311 "Toxicity Characteristic Leaching Procedure" (TCLP). The TCLP extraction fluids were then filtered and analyzed by ICP. The results of the subsequent analysis are presented in Table 2.



Treatability Study

1



Table 2. PRE-TREATMENT TCLP RESULTS

MT ² Sample #	Client I.D. #		MT ² Test #	Natural pH of the Material	TCLP Pb (mg/l)
246-1	Primary Berm		16-24-1	8.33	544.
246-2	Range Floor		16-24-2	7.49	16.8
RCRA Criteria					5.0 mg/l
UTS Limit					0.75 mg/l

The untreated TCLP Pb extraction values of the samples indicates that the materials are above the RCRA criteria for leachable Pb.

3.0 TREATMENT STUDIES

ECOBOND[®] Pb formula was applied and mixed with the samples at the 2.0% and 4.0% weight % levels. As the sample was received moist, nowater was added to the sample. After weighing measurements and complete mixing with the treatment materials, the samples and treatment materials were allowed to cure and stabilize at least overnight. The following day, sub-samples were taken and extracted for Pb implementing EPA's SW-846 Method No. 1311 "Toxicity Characteristic Leaching Procedure" (TCLP). The TCLP extraction fluids were then filtered and analyzed by ICP. The results of the ECOBOND[®] Pb treatment test are presented in Table 3.

Table 3. ECOBOND[®] Pb TCLP Treatment Data

MT ² Test #	MT ² I.D. #	Client I.D. #	Sample Weight, grams	ECOBOND [®] Pb Formulation (Weight %)	TCLP Pb mg/l UNTREATED	TCLP Pb mg/l TREATED
16-24-3	246-1	Primary Berm	100	2.0	544.	2.5
16-24-4	246-1	Primary Berm	100	4.0	544.	1.5
16-24-5	246-2	Range Floor	100	2.0	16.8	1.2
16-24-6	246-2	Range Floor	100	4.0	16.8	0.9
RCRA Criteria						5.0 mg/l
UTS Limit						0.75 mg/l



4.0 CONCLUSIONS

The addition of 2.0% and 4.0% ECOBOND® Pb did significantly lower the TCLP Pb in both of the City of Tucson samples to below the RCRA limit of 5.0 mg/L.

5.0 RECOMMENDATION

MT² recommends the addition of 3.0 to 4.0% weight % of ECOBOND® Pb to the City of Tucson Primary Berm and Range Floor soil samples to effectively lower the TCLP Pb to well below the RCRA TCLP criteria to ensure all contaminated materials meet the RCRA limits.

MT2 has extensive experience treating firing range soils in Arizona and across the United States. MT2 has found that actual range soils, once excavated and processed to remove bullets and bullet fragments, are usually treatable to below RCRA TCLP criteria with less ECOBOND® than is indicated in the treatability study, which is most often performed on "worst case" range samples.



Treatability Study

3



Appendix B

Laboratory Reports



April 23, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT-Silverbell

Order No.: 0804647

Dear Mark Pokorny,

Turner Laboratories, Inc. received 1 sample on 4/17/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT-Silverbell
Lab Order: 0804647
Date Received: 4/17/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804647-01A	SB0417-01		4/17/2008 9:10:00 AM



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** SB0417-01
Lab Order: 0804647 **Collection Date:** 4/17/2008 9:10:00 AM
Project: COT-Silverbell
Lab ID: 0804647-01A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/18/2008 4:01:00 PM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/18/2008 6:55:00 PM
Barium	ND	10		mg/L	10	4/18/2008 6:55:00 PM
Cadmium	ND	0.50		mg/L	10	4/18/2008 6:55:00 PM
Chromium	ND	1.0		mg/L	10	4/18/2008 6:55:00 PM
Lead	ND	1.0		mg/L	10	4/18/2008 6:55:00 PM
Selenium	ND	0.50		mg/L	10	4/18/2008 6:55:00 PM
Silver	ND	2.0		mg/L	10	4/18/2008 6:55:00 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

2

23-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804647
Client: Metals Treatment Technologies
Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804647-01A	SB0417-01	4/17/2008 9:10:00 AM	Soil	ICP Metals, TCLP Leached		4/18/2008	4/18/2008 6:55:00 PM
				Mercury, TCLP Leached		4/18/2008	4/18/2008 4:01:00 PM





TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0804647
Client: Metals Treatment Technologies
Project: COT-Silverbell

Turner Laboratories, Inc. Date: 23-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID: MB-10587	Batch ID: 10587	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/18/2008 3:19:00 PM	Prep Date: 4/18/2008
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620070	
Analyte		Result	PQL	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		ND	0.001		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

Sample ID: MB-10586 **Batch ID:** 10586 **Test Code:** SW1311/6010 **Units:** mg/L **Analysis Date:** 4/18/2008 5:19:47 PM **Prep Date:** 4/18/2008
Client ID: ICP_080418A **Run ID:** ICP_080418A **SeqNo:** 620006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1									
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Date: 23-Apr-08

Turner Laboratories, Inc.

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 0804522-01AMS	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:29:00 PM	Prep Date: 4/18/2008
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620074	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.004916	0.001	0.005	0	98.3 85 115 0
Sample ID: 0804522-01AMS	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:31:00 PM	Prep Date: 4/18/2008
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620075	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.005042	0.001	0.005	0	101 85 115 0.004916 2.53 20
Sample ID: 0804561-01AMS	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:36:00 PM	Prep Date: 4/18/2008
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620077	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.005142	0.001	0.005	0	103 85 115 0
Sample ID: 0804661-01AMS	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:39:00 PM	Prep Date: 4/18/2008
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620078	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.005171	0.001	0.005	0	103 85 115 0.005142 0.562 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

Sample ID: 0804522-01AMS		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 5:41:14 PM		Prep Date: 4/18/2008	
Client ID:		Run ID: ICP_080418A		SeqNo: 620010							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.133	1	2	0	107	75	125	0			J
Barium	2.952	10	2	0.8576	105	75	125	0			*
Cadmium	3.613	0.5	2	1.501	106	75	125	0			
Chromium	2.158	1	2	0	108	75	125	0			
Lead	2.1	1	2	0	105	75	125	0			*
Selenium	2.194	0.5	2	0	110	75	125	0			*
Silver	0.9698	2	1	0	97	75	125	0			J

Sample ID: 0804522-01AMSD		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 5:45:33 PM		Prep Date: 4/18/2008	
Client ID:		Run ID: ICP_080418A		SeqNo: 620011							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.156	1	2	0	108	75	125	2.133	1.1	20	
Barium	2.957	10	2	0.8576	105	75	125	2.952	0	20	J
Cadmium	3.621	0.5	2	1.501	106	75	125	3.613	0.226	20	*
Chromium	2.163	1	2	0	108	75	125	2.158	0.22	20	
Lead	2.102	1	2	0	105	75	125	2.1	0.105	20	*
Selenium	2.232	0.5	2	0	112	75	125	2.194	1.74	20	*
Silver	0.9754	2	1	0	97.5	75	125	0.9698	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

Sample ID: 0804661-01/AMS		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 5:58:28 PM		Prep Date: 4/18/2008	
Client ID:		Run ID: ICP_080418A		SeqNo: 620013							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD.Limit	Qual
Arsenic	2.046	1	2	0	102	75	125	0			J
Barium	2.765	10	2	0.6545	106	75	125	0			J
Cadmium	2.165	0.5	2	0	108	75	125	0			*
Chromium	2.052	1	2	0	103	75	125	0			
Lead	2.008	1	2	0	100	75	125	0			*
Selenium	2.143	0.5	2	0	107	75	125	0			*
Silver	0.9769	2	1	0	97.7	75	125	0			J

Sample ID: 0804661-01/AMSD		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 6:02:49 PM		Prep Date: 4/18/2008	
Client ID:		Run ID: ICP_080418A		SeqNo: 620014							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD.Limit	Qual
Arsenic	2.129	1	2	0	106	75	125	2.046	4	20	J
Barium	2.754	10	2	0.6545	105	75	125	2.765	0	20	J
Cadmium	2.165	0.5	2	0	108	75	125	2.165	0.00351	20	*
Chromium	2.149	1	2	0	107	75	125	2.052	4.64	20	
Lead	2.105	1	2	0	105	75	125	2.008	4.68	20	
Selenium	2.231	0.5	2	0	112	75	125	2.143	4.02	20	*
Silver	0.9724	2	1	0	97.2	75	125	0.9769	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Date: 23-Apr-08

Turner Laboratories, Inc.

CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10587	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:22:00 PM				Prep Date: 4/18/2008			
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620071							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0048	0.001	0.005	0	96	85	115	0			

Sample ID: LCSD-10587	Batch ID: 10587	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/18/2008 3:24:00 PM				Prep Date: 4/18/2008			
Client ID:		Run ID: HGANALYZER_080418		SeqNo: 620072							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004916	0.001	0.005	0	98.3	85	115	0.0048	2.39	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Laboratory Control Spike - generic

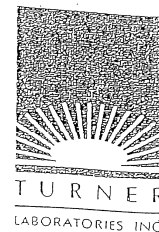
CLIENT: Metals Treatment Technologies
Work Order: 0804647
Project: COT-Silverbell

Sample ID: LCS-10586		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 5:24:03 PM		Prep Date: 4/18/2008	
Client ID:		Run ID:		ICP_080418A		SeqNo: 620007					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD.Limit	Qual
Arsenic	2.12	1	2	0	106	80	120	0			J
Barium	2.125	10	2	0	106	80	120	0			J
Cadmium	2.134	0.5	2	0	107	80	120	0			*
Chromium	2.123	1	2	0	106	80	120	0			
Lead	2.065	1	2	0	103	80	120	0			
Selenium	2.121	0.5	2	0	106	80	120	0			*
Silver	0.9712	2	1	0	97.1	80	120	0			J

Sample ID: LCS-10586		Batch ID: 10586		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/18/2008 5:28:22 PM		Prep Date: 4/18/2008	
Client ID:		Run ID:		ICP_080418A		SeqNo: 620008					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD.Limit	Qual
Arsenic	2.115	1	2	0	106	80	120	2.12	0.223	20	
Barium	2.139	10	2	0	107	80	120	2.125	0	20	J
Cadmium	2.152	0.5	2	0	108	80	120	2.134	0.852	20	*
Chromium	2.137	1	2	0	107	80	120	2.123	0.641	20	
Lead	2.069	1	2	0	103	80	120	2.065	0.151	20	
Selenium	2.149	0.5	2	0	107	80	120	2.121	1.34	20	*
Silver	0.9677	2	1	0	96.8	80	120	0.9712	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804647

Received By: DW

Received Date/Time: 4/17/08 09:35

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 12
13. Number of sample containers received? 3

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85711

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com



TURNER WORK ORDER # 08041647 DATE _____ PAGE _____ OF _____

PROJECT NAME: <u>CGT-SILVERBELL #</u>		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
CONTACT NAME: <u>MARK POKORNY</u>		<input type="checkbox"/> BOD <input type="checkbox"/> TSS <input type="checkbox"/> COD <input type="checkbox"/> pH <input type="checkbox"/> Coliform <input type="checkbox"/> MPN <input type="checkbox"/> SDWA/INORGANICS <input type="checkbox"/> WAD <input type="checkbox"/> Cyanide <input type="checkbox"/> Dissolved <input type="checkbox"/> Priority Pollutants <input type="checkbox"/> Metals <input checked="" type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Semi-VOC <input type="checkbox"/> Pesticides <input type="checkbox"/> PCBs <input type="checkbox"/> HAAS <input type="checkbox"/> TTHMS <input type="checkbox"/> Volatile Organics <input type="checkbox"/> Base Neutrals <input type="checkbox"/> Acids	
COMPANY NAME: <u>METALS TREATMENT TECHNOLOGIES</u>		<input type="checkbox"/> Crav. 1664A <input type="checkbox"/> OI and Grease <input type="checkbox"/> IR(015A2) <input type="checkbox"/> Total Petroleum Hydrocarbons <input type="checkbox"/> 8082 <input type="checkbox"/> Pesticides <input type="checkbox"/> 8081 <input type="checkbox"/> 625/8270	
ADDRESS: <u>14045 W. 66th AVE ARIZONA, CO 80004</u>		<input type="checkbox"/> 624/5242/8260 <input type="checkbox"/> 1664A <input type="checkbox"/> 8081 <input type="checkbox"/> 8082 <input type="checkbox"/> Pesticides <input type="checkbox"/> PCBs <input type="checkbox"/> HAAS <input type="checkbox"/> TTHMS	
PHONE: <u>303-4526977</u> FAX: <u>303-4526978</u>		<input type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Semi-VOC <input type="checkbox"/> Pesticides <input type="checkbox"/> PCBs <input type="checkbox"/> HAAS <input type="checkbox"/> TTHMS	
SAMPLER'S SIGNATURE: <u>Mark Pokorny</u> 303-994,4948		<input type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Semi-VOC <input type="checkbox"/> Pesticides <input type="checkbox"/> PCBs <input type="checkbox"/> HAAS <input type="checkbox"/> TTHMS	
SAMPLE ID: <u>SB0417-01</u>	DATE: <u>4-17-08</u>	TIME: <u>0910</u>	LAB ID: <u>5612</u>
NUMBER OF CONTAINERS: <u>3</u>			
1. RELINQUISHED BY: <u>Mark Pokorny</u> Signature: <u>Mark Pokorny</u> Printed Name: <u>MARK POKORNY</u> Firm: <u>MT2</u> Date/Time: <u>4-17-08 0935</u>			
2. RECEIVED BY: _____ Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			
3. RELINQUISHED BY: _____ Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			
4. RECEIVED BY: <u>Turner</u> Signature: <u>Turner</u> Printed Name: <u>TURNER LABORATORIES, INC.</u> Firm: <u>TURNER LABORATORIES, INC.</u> Date/Time: <u>4/17/08 09:35</u>			
TURNAROUND REQUIREMENTS: Standard (approx. 10 days) * Next Day <input checked="" type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day <input type="checkbox"/> Fax Preliminary Results <input type="checkbox"/> Requested Report Date: _____ * Working Days		REPORT REQUIREMENTS: I. Routine Report <input type="checkbox"/> II. Report (includes DLP, MS, MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (includes All Raw Data) Add 10% to invoice <input type="checkbox"/>	
INVOICE INFORMATION: Account # _____ P.O. # _____ Bill to: _____ Total Containers: <u>3</u> Temperature: <u>12</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice		SAMPLE RECEIPT: Account # _____ P.O. # _____ Bill to: _____ Total Containers: <u>3</u> Temperature: <u>12</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice	
SPECIAL INSTRUCTIONS/COMMENTS: COMPLIANCE ANALYSIS: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No MAIL ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER			
DISTRIBUTION: WHITE - return to originator PINK - retained by originator See back of pink copy for general terms and conditions/limits of liability.			

8 ECRA METALS
TCLP
RUSH - 4/8 HRS.



April 23, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT Silverbell

Order No.: 0804649

Dear Mark Pokorny,

Turner Laboratories, Inc. received 3 samples on 4/17/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT Silverbell
Lab Order: 0804649
Date Received: 4/17/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804649-01A	Air #1		4/16/2008 6:00:00 PM
0804649-02A	Air #2		4/16/2008 5:50:00 PM
0804649-03A	Air #3		4/16/2008 5:55:00 PM

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies **Client Sample ID:** Air #1
Lab Order: 0804649 **Collection Date:** 4/16/2008 6:00:00 PM
Project: COT Silverbell
Lab ID: 0804649-01A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/18/2008 7:51:26 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

2

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies Client Sample ID: Air #2
Lab Order: 0804649 Collection Date: 4/16/2008 5:50:00 PM
Project: COT Silverbell
Lab ID: 0804649-02A Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/18/2008 7:55:44 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

3

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies
Lab Order: 0804649
Project: COT Silverbell
Lab ID: 0804649-03A

Client Sample ID: Air #3
Collection Date: 4/16/2008 5:55:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/18/2008 8:00:04 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

4

23-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804649

Client: Metals Treatment Technologies

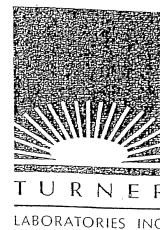
Project: COT Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804649-01A	Air #1	4/16/2008 6:00:00 PM	Solid	ICP Metals-RCRA, Total		4/17/2008	4/18/2008 7:51:26 PM
0804649-02A	Air #2	4/16/2008 5:50:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 7:55:44 PM
0804649-03A	Air #3	4/16/2008 5:55:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 8:00:04 PM



TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804649

Received By: aw

Received Date/Time: 4/17/08 10:10

Delivered by: client

1. Shipping container/cooler in good condition? ☐ Yes ☐ No ☒ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? NA
13. Number of sample containers received? 3

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 08047049 DATE 08/04/08 PAGE 1 OF 1

PROJECT NAME <u>CGT SILVERBELL #</u> CONTACT NAME <u>MARK POKORNY</u> COMPANY NAME <u>METALS TREATMENT TECH</u> ADDRESS <u>14045 W. 66TH AVE ARVADA, CO 80004</u> PHONE <u>303-687-6877</u> FAX <u>303-687-6988</u> SAMPLER'S SIGNATURE <u>Mark Pokorny</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX <table border="1"> <tr> <td><input type="checkbox"/> Acids</td> <td><input type="checkbox"/> Volatile Organics</td> <td><input type="checkbox"/> TTHMS</td> <td><input type="checkbox"/> HAAS</td> <td><input type="checkbox"/> PCBs</td> <td><input type="checkbox"/> Total Petroleum Hydrocarbons</td> <td><input type="checkbox"/> Oil and Grease</td> <td><input type="checkbox"/> VOA</td> <td><input type="checkbox"/> TCLP Analysis</td> <td><input type="checkbox"/> Metals</td> <td><input type="checkbox"/> Total Priority Pollutants</td> <td><input type="checkbox"/> Cyanide</td> <td><input type="checkbox"/> WAD</td> <td><input type="checkbox"/> SDWA/INORGANICS</td> <td><input type="checkbox"/> MPN</td> <td><input type="checkbox"/> pH</td> <td><input type="checkbox"/> COD</td> <td><input type="checkbox"/> TSS</td> <td><input type="checkbox"/> BOD</td> </tr> </table>				<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> TTHMS	<input type="checkbox"/> HAAS	<input type="checkbox"/> PCBs	<input type="checkbox"/> Total Petroleum Hydrocarbons	<input type="checkbox"/> Oil and Grease	<input type="checkbox"/> VOA	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Total Priority Pollutants	<input type="checkbox"/> Cyanide	<input type="checkbox"/> WAD	<input type="checkbox"/> SDWA/INORGANICS	<input type="checkbox"/> MPN	<input type="checkbox"/> pH	<input type="checkbox"/> COD	<input type="checkbox"/> TSS	<input type="checkbox"/> BOD				
<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> TTHMS	<input type="checkbox"/> HAAS	<input type="checkbox"/> PCBs	<input type="checkbox"/> Total Petroleum Hydrocarbons	<input type="checkbox"/> Oil and Grease	<input type="checkbox"/> VOA	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Total Priority Pollutants	<input type="checkbox"/> Cyanide	<input type="checkbox"/> WAD	<input type="checkbox"/> SDWA/INORGANICS	<input type="checkbox"/> MPN	<input type="checkbox"/> pH	<input type="checkbox"/> COD	<input type="checkbox"/> TSS	<input type="checkbox"/> BOD												
NUMBER OF CONTAINERS <table border="1"> <tr> <td>AIR #1</td> <td>4/16/08</td> <td>18:00</td> <td>CARBON</td> <td>1</td> </tr> <tr> <td>AIR #2</td> <td>4/16/08</td> <td>17:50</td> <td>↓</td> <td>1</td> </tr> <tr> <td>AIR #3</td> <td>4/16/08</td> <td>17:55</td> <td>↓</td> <td>1</td> </tr> </table>				AIR #1	4/16/08	18:00	CARBON	1	AIR #2	4/16/08	17:50	↓	1	AIR #3	4/16/08	17:55	↓	1	TURNAROUND REQUIREMENTS: Standard (approx. 10 days) Next Day <input checked="" type="checkbox"/> Day <input type="checkbox"/> 5 Day <input type="checkbox"/> Fax Preliminary Results Requested Report Date _____ * Working Days				REPORT REQUIREMENTS: I. Routine Report II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to invoice				INVOICE INFORMATION: Account # _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>3</u> Temperature <u>WTF</u> <input type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice			
AIR #1	4/16/08	18:00	CARBON	1																										
AIR #2	4/16/08	17:50	↓	1																										
AIR #3	4/16/08	17:55	↓	1																										
1. RELINQUISHED BY: Signature <u>Mark Pokorny</u> Printed Name <u>MARK POKORNY</u> Firm <u>MT2</u> Date/Time <u>4.17.08 10:10</u>				2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____				3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____				4. RECEIVED BY: Signature <u>Dan Wynn</u> Printed Name <u>Dan Wynn</u> Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>4/17/08 10:10</u>																		
SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER				AIR CARTRIDGE FOR TOTAL Pb 48 HR RUSH EMAIL RESULTS TO MPOKORNY@MT2.COM																										

DISTRIBUTION: WHITE - return to originator PINK - retained by originator See back of pink copy for general terms and conditions/limits of liability.

April 23, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998



RE: COT Silverbell

Order No.: 0804682

Dear Mark Pokorny,

Turner Laboratories, Inc. received 4 samples on 4/17/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT Silverbell
Lab Order: 0804682
Date Received: 4/17/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804682-01A	TCLP-0417-02		4/17/2008 3:45:00 PM
0804682-02A	Air #4		4/17/2008 3:50:00 PM
0804682-03A	Air #5		4/17/2008 3:55:00 PM
0804682-04A	Air #6		4/17/2008 4:00:00 PM

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0417-02
Lab Order: 0804682 **Collection Date:** 4/17/2008 3:45:00 PM
Project: COT Silverbell
Lab ID: 0804682-01A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/21/2008 10:30:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/21/2008 1:42:51 PM
Barium	ND	10		mg/L	10	4/20/2008 12:47:07 PM
Cadmium	ND	0.50		mg/L	10	4/20/2008 12:47:07 PM
Chromium	ND	1.0		mg/L	10	4/20/2008 12:47:07 PM
Lead	ND	1.0		mg/L	10	4/20/2008 12:47:07 PM
Selenium	ND	0.50		mg/L	10	4/20/2008 12:47:07 PM
Silver	ND	2.0		mg/L	10	4/21/2008 1:42:51 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

2



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** Air #4
Lab Order: 0804682 **Collection Date:** 4/17/2008 3:50:00 PM
Project: COT Silverbell
Lab ID: 0804682-02A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/20/2008 3:43:28 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

3

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies **Client Sample ID:** Air #5
Lab Order: 0804682 **Collection Date:** 4/17/2008 3:55:00 PM
Project: COT Silverbell
Lab ID: 0804682-03A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/20/2008 3:47:49 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

4



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT:	Metals Treatment Technologies	Client Sample ID:	Air #6
Lab Order:	0804682	Collection Date:	4/17/2008 4:00:00 PM
Project:	COT Silverbell		
Lab ID:	0804682-04A	Matrix:	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/20/2008 4:13:46 PM

Qualifiers:	ND - Not Detected at or above the PQL	PQL - Practical Quantitation Limit
	J - Analyte detected below quantitation limits	S - Spike Recovery outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	R - RPD outside accepted recovery limits
	* - Value exceeds Maximum Contaminant Level	E - Value above quantitation range

5



TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0804682
Client: Metals Treatment Technologies
Project: COT-Silverbell

Date: 23-Apr-08

Turner Laboratories, Inc.

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID: MB-10593	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:22:00 AM	Prep Date: 4/20/2008
Client ID:	Run ID:	HGANALYZER_080421	SeqNo: 620258		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.001			

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

QC SUMMARY REPORT

Method Blank

CLIENT: Metals Treatment Technologies

Work Order: 0804682

Project: COT Silverbell

Sample ID: MB-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/20/2008 12:25:58 PM	Prep Date: 4/19/2008						
Client ID:	Run ID: ICP_080420A	SeqNo: 620160									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									

Sample ID: MB-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/21/2008 1:25:44 PM	Prep Date: 4/19/2008						
Client ID:	Run ID: ICP_080421A	SeqNo: 620375									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: MB-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 2:50:17 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620140			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	ND	20			
				HighLimit	RPD Ref Val
				LowLimit	RPDLimit
					Qual
Sample ID: MB-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/21/2008 2:51:44 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080421A	SeqNo: 620364			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	ND	20			
				HighLimit	RPD Ref Val
				LowLimit	RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies

Work Order: 0804682

Project: COT Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0804682-01AMS	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:32:00 AM	Prep Date: 4/20/2008
Client ID: TCLP-0417-02		Run ID: HGANALYZER_080421		SeqNo: 620262	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.004456	0.001	0.005	0	89.1 115 0

Sample ID: 0804682-01AMSD	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:34:00 AM	Prep Date: 4/20/2008
Client ID: TCLP-0417-02		Run ID: HGANALYZER_080421		SeqNo: 620263	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00473	0.001	0.005	0	94.6 115 0.004456 5.97 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: 0804682-01AMS		Batch ID: 10589		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/20/2008 12:51:46 PM		Prep Date: 4/19/2008	
Client ID: TCLP-0417-02		Run ID: ICP_080420A		SeqNo: 620164							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	2.249	10	2	0	112	75	125	0			J
Cadmium	2.233	0.5	2	0	112	75	125	0			*
Chromium	2.139	1	2	0	107	75	125	0			
Lead	2.549	1	2	0.4315	106	75	125	0			
Selenium	2.146	0.5	2	0	107	75	125	0			*

Sample ID: 0804682-01AMSD		Batch ID: 10589		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/20/2008 12:56:27 PM		Prep Date: 4/19/2008	
Client ID: TCLP-0417-02		Run ID: ICP_080420A		SeqNo: 620165							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	2.206	10	2	0	110	75	125	2.249	0	20	J
Cadmium	2.194	0.5	2	0	110	75	125	2.233	1.78	20	*
Chromium	2.094	1	2	0	105	75	125	2.139	2.16	20	
Lead	2.522	1	2	0.4315	105	75	125	2.549	1.06	20	
Selenium	2.109	0.5	2	0	105	75	125	2.146	1.77	20	*

Sample ID: 0804682-01AMS		Batch ID: 10589		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 1:47:30 PM		Prep Date: 4/19/2008	
Client ID: TCLP-0417-02		Run ID: ICP_080421A		SeqNo: 620379							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.468	1	2	0	123	75	125	0			
Silver	0.955	2	1	0	95.5	75	125	0			J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

CLIENT: Metals Treatment Technologies

Work Order: 0804682

Project: COT Silverbell

Sample ID: 0804682-01AMSD		Batch ID: 10589		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 1:51:56 PM		Prep Date: 4/19/2008	
Client ID: TCLP-0417-02		Run ID: ICP_080421A		SeqNo: 620380							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.391	1	2	0	120	75	125	2.468	3.16	20	
Silver	0.9531	2	1	0	95.3	75	125	0.955	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

QC SUMMARY REPORT
Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: 0804681-01AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 3:12:50 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620144			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	165.9	10	50	15.12	302
					125
					0
					S
Sample ID: 0804681-01AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 3:17:06 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620145			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	63.85	10	50	15.12	97.5
					125
					165.9
					88.8
					20
					R
Sample ID: 0804681-09AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 3:30:36 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620147			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	51.09	10	50	7.883	86.4
					125
					0
Sample ID: 0804681-09AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 3:34:53 PM	Prep Date: 4/18/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620148			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	52.29	10	50	7.883	88.8
					125
					51.09
					2.33
					20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc. Date: 23-Apr-08

CLIENT: Metals Treatment Technologies

Work Order: 0804682

Project: COT Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10593	Batch ID: 10593	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/21/2008 10:25:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620259	
Analyte	Result	PQL	SPK value	SPK Ref Val	
Mercury	0.005085	0.001	0.005	0	
		%REC	LowLimit	HighLimit	RPDLimit
		102	85	115	0
Sample ID: LCSD-10593	Batch ID: 10593	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/21/2008 10:27:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620260	
Analyte	Result	PQL	SPK value	SPK Ref Val	
Mercury	0.005005	0.001	0.005	0	
		%REC	LowLimit	HighLimit	RPDLimit
		100	85	115	1.59
				0.005085	20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

8

QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: LCS-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/20/2008 12:34:14 PM	Prep Date: 4/19/2008						
Client ID:		Run ID: ICP_080420A		SeqNo: 620161							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	2.13	10	2	0	107	80	120	0			J
Cadmium	2.154	0.5	2	0	108	80	120	0			*
Chromium	2.139	1	2	0	107	80	120	0			
Lead	2.115	1	2	0	106	80	120	0			
Selenium	2.172	0.5	2	0	109	80	120	0			*

Sample ID: LCS0-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/20/2008 12:38:33 PM	Prep Date: 4/19/2008						
Client ID:		Run ID: ICP_080420A		SeqNo: 620162							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	2.133	10	2	0	107	80	120	2.13	0	20	J
Cadmium	2.158	0.5	2	0	108	80	120	2.154	0.197	20	*
Chromium	2.127	1	2	0	106	80	120	2.139	0.543	20	
Lead	2.109	1	2	0	105	80	120	2.115	0.252	20	
Selenium	2.127	0.5	2	0	106	80	120	2.172	2.08	20	*

Sample ID: LCS-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/21/2008 1:30:00 PM	Prep Date: 4/19/2008						
Client ID:		Run ID: ICP_080421A		SeqNo: 620376							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.015	1	2	0	101	80	120	0			
Silver	0.9558	2	1	0	95.6	80	120	0			J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: LCSD-10589	Batch ID: 10589	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/21/2008 1:34:18 PM	Prep Date: 4/19/2008						
Client ID:	Run ID: ICP_080421A	SeqNo: 620377									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLmit	Qual
Arsenic	1.956	1	2	0	97.8	30	120	2.015	2.97	20	
Silver	0.944	2	1	0	94.4	30	120	0.9558	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804682
Project: COT Silverbell

Sample ID: LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 2:54:32 PM	Prep Date: 4/18/2008
Client ID:		Run ID: ICP_080420A		SeqNo: 620141	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	104	20	100	0	104
					HighLimit
					LowLimit
					RPDLimit
					Qual
					%RPD
					RPDLimit
					Qual
Sample ID: LCSD-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 2:59:05 PM	Prep Date: 4/18/2008
Client ID:		Run ID: ICP_080420A		SeqNo: 620142	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	106.9	20	100	0	107
					HighLimit
					LowLimit
					RPDLimit
					Qual
					%RPD
					RPDLimit
					Qual
Sample ID: LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/21/2008 2:55:10 PM	Prep Date: 4/18/2008
Client ID:		Run ID: ICP_080421A		SeqNo: 620365	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	107	20	100	0	107
					HighLimit
					LowLimit
					RPDLimit
					Qual
					%RPD
					RPDLimit
					Qual
Sample ID: LCSD-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/21/2008 2:59:41 PM	Prep Date: 4/18/2008
Client ID:		Run ID: ICP_080421A		SeqNo: 620366	
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	106.3	20	100	0	106
					HighLimit
					LowLimit
					RPDLimit
					Qual
					%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804649

Received By: aw

Received Date/Time: 4/17/08 10:10

Delivered by: client

1. Shipping container/cooler in good condition? ☐ Yes ☐ No ☒ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? NA
13. Number of sample containers received? 3

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

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TURNER WORK ORDER # 0804082 DATE 4/17/2008 PAGE 1 OF 1

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April 23, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT Silverbell

Order No.: 0804701

Dear Mark Pokorny,

Turner Laboratories, Inc. received 5 samples on 4/18/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066



Shari Bauman
Laboratory Director



2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT Silverbell
Lab Order: 0804701
Date Received: 4/18/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804701-01A	TCLP-0418-03		4/18/2008 2:35:00 PM
0804701-02A	TCLP-0418-04		4/18/2008 3:00:00 PM
0804701-03A	Air #7		4/18/2008 3:00:00 PM
0804701-04A	Air #8		4/18/2008 3:05:00 PM
0804701-05A	Air #9		4/18/2008 3:10:00 PM



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0418-03
Lab Order: 0804701 **Collection Date:** 4/18/2008 2:35:00 PM
Project: COT Silverbell
Lab ID: 0804701-01A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/21/2008 10:37:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/21/2008 2:16:13 PM
Barium	ND	10		mg/L	10	4/21/2008 2:16:13 PM
Cadmium	ND	0.50		mg/L	10	4/21/2008 2:16:13 PM
Chromium	ND	1.0		mg/L	10	4/21/2008 2:16:13 PM
Lead	ND	1.0		mg/L	10	4/21/2008 2:16:13 PM
Selenium	ND	0.50		mg/L	10	4/21/2008 2:16:13 PM
Silver	ND	2.0		mg/L	10	4/21/2008 2:16:13 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0418-04
Lab Order: 0804701 **Collection Date:** 4/18/2008 3:00:00 PM
Project: COT Silverbell
Lab ID: 0804701-02A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/21/2008 10:39:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/21/2008 2:34:06 PM
Barium	ND	10		mg/L	10	4/21/2008 2:34:06 PM
Cadmium	ND	0.50		mg/L	10	4/21/2008 2:34:06 PM
Chromium	ND	1.0		mg/L	10	4/21/2008 2:34:06 PM
Lead	ND	1.0		mg/L	10	4/21/2008 2:34:06 PM
Selenium	ND	0.50		mg/L	10	4/21/2008 2:34:06 PM
Silver	ND	2.0		mg/L	10	4/21/2008 2:34:06 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range



Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies
Lab Order: 0804701
Project: COT Silverbell
Lab ID: 0804701-03A

Client Sample ID: Air #7
Collection Date: 4/18/2008 3:00:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/20/2008 2:15:47 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies Client Sample ID: Air #8
Lab Order: 0804701 Collection Date: 4/18/2008 3:05:00 PM
Project: COT Silverbell
Lab ID: 0804701-04A Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Lead	ND	10		ppm/Filter	1	4/20/2008 2:20:09 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

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Turner Laboratories, Inc.

Date: 23-Apr-08



CLIENT:	Metals Treatment Technologies	Client Sample ID:	Air #9
Lab Order:	0804701	Collection Date:	4/18/2008 3:10:00 PM
Project:	COT Silverbell		
Lab ID:	0804701-05A	Matrix:	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/20/2008 2:24:25 PM

Qualifiers:	ND - Not Detected at or above the PQL	PQL - Practical Quantitation Limit
	J - Analyte detected below quantitation limits	S - Spike Recovery outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	R - RPD outside accepted recovery limits
	* - Value exceeds Maximum Contaminant Level	E - Value above quantitation range

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23-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804701

Client: Metals Treatment Technologies

Project: COT Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804701-01A	TCLP-0418-03	4/18/2008 2:35:00 PM	Soil	ICP Metals, TCLP Leached		4/20/2008	4/21/2008 2:16:13 PM
				Mercury, TCLP Leached		4/20/2008	4/21/2008 10:37:00 AM
0804701-02A	TCLP-0418-04	4/18/2008 3:00:00 PM		ICP Metals, TCLP Leached		4/20/2008	4/21/2008 2:34:06 PM
				Mercury, TCLP Leached		4/20/2008	4/21/2008 10:39:00 AM
0804701-03A	Air #7		Solid	ICP Metals-RCRA, Total		4/19/2008	4/20/2008 2:15:47 PM
0804701-04A	Air #8	4/18/2008 3:05:00 PM		ICP Metals-RCRA, Total		4/19/2008	4/20/2008 2:20:09 PM
0804701-05A	Air #9	4/18/2008 3:10:00 PM		ICP Metals-RCRA, Total		4/19/2008	4/20/2008 2:24:25 PM





TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0804701
Client: Metals Treatment Technologies
Project: COT-Silverbell

Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies

Work Order: 0804701

Project: COT Silverbell

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10593	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:22:00 AM	Prep Date: 4/20/2008
Client ID:	Run ID:	HGANALYZER_080421		SeqNo: 620258	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	ND	0.001			
				HighLimit	LowLimit
				RPD Ref Val	%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

Sample ID: MB-10592 **Batch ID:** 10592 **Test Code:** SW1311/6010 **Units:** mg/L **Analysis Date:** 4/21/2008 2:00:54 PM **Prep Date:** 4/20/2008
Client ID: ICP_080421A **Run ID:** 620381 **SeqNo:**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1									
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

Sample ID: MB-10590	Batch ID: 10590	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 1:57:52 PM	Prep Date: 4/19/2008
Client ID:		Run ID: ICP_080420A		SeqNo: 620166	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	ND	20			

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Turner Laboratories, Inc.

Date: 23-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0804682-01AMS	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:32:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620262	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.004456	0.001	0.005	0	89.1
				LowLimit	HighLimit
				115	0
				%RPD	RPDLimit
					Qual
Sample ID: 0804682-01AMSD	Batch ID: 10593	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/21/2008 10:34:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620263	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.00473	0.001	0.005	0	94.6
				LowLimit	HighLimit
				115	0.004456
				%RPD	RPDLimit
					5.97
					Qual
					20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

Sample ID: 0804701-01AMS		Batch ID: 10592		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 2:20:37 PM		Prep Date: 4/20/2008	
Client ID: TCLP-0418-03		Run ID: ICP_080421A		SeqNo: 620385							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.108	1	2	0	105	75	125	0			J
Barium	2.246	10	2	0	112	75	125	0			*
Cadmium	2.201	0.5	2	0	110	75	125	0			
Chromium	2.097	1	2	0	105	75	125	0			
Lead	2.144	1	2	0	107	75	125	0			
Selenium	2.12	0.5	2	0	106	75	125	0			*
Silver	0.9489	2	1	0	94.9	75	125	0			J

Sample ID: 0804701-01AMSD		Batch ID: 10592		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 2:25:06 PM		Prep Date: 4/20/2008	
Client ID: TCLP-0418-03		Run ID: ICP_080421A		SeqNo: 620386							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2	1	2	0	100	75	125	2.108	5.22	20	
Barium	2.202	10	2	0	110	75	125	2.246	0	20	J
Cadmium	2.153	0.5	2	0	108	75	125	2.201	2.23	20	*
Chromium	1.987	1	2	0	99.4	75	125	2.097	5.39	20	
Lead	2.023	1	2	0	101	75	125	2.144	5.83	20	
Selenium	1.955	0.5	2	0	97.8	75	125	2.12	8.11	20	*
Silver	0.938	2	1	0	93.8	75	125	0.9489	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Date: 23-Apr-08

Turner Laboratories, Inc.

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10593	Batch ID: 10593	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/21/2008 10:25:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620259	
Analyte	Result	PQL	SPK value	SPK Ref Val	
Mercury	0.005085	0.001	0.005	0	
		%REC	LowLimit	HighLimit	RPD Ref Val
			85	115	0
		%RPD	RPDLimit		Qual
Sample ID: LCSD-10593	Batch ID: 10593	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/21/2008 10:27:00 AM	Prep Date: 4/20/2008
Client ID:		Run ID: HGANALYZER_080421		SeqNo: 620260	
Analyte	Result	PQL	SPK value	SPK Ref Val	
Mercury	0.005005	0.001	0.005	0	
		%REC	LowLimit	HighLimit	RPD Ref Val
			85	115	0.005085
		%RPD	RPDLimit		1.59
					20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

Sample ID: LCS-10592		Batch ID: 10592		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 2:03:57 PM		Prep Date: 4/20/2008	
Client ID:		Run ID: ICP_080421A		SeqNo: 620382							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.994	1	2	0	99.7	80	120	0			J
Barium	2.162	10	2	0	108	80	120	0			*
Cadmium	2.197	0.5	2	0	110	80	120	0			
Chromium	2.137	1	2	0	107	80	120	0			
Lead	2.124	1	2	0	106	80	120	0			
Selenium	2.1	0.5	2	0	105	80	120	0			*
Silver	0.9842	2	1	0	98.4	80	120	0			J

Sample ID: LCSD-10592		Batch ID: 10592		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/21/2008 2:08:18 PM		Prep Date: 4/20/2008	
Client ID:		Run ID: ICP_080421A		SeqNo: 620383							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2	1	2	0	100	80	120	1.994	0.338	20	J
Barium	2.165	10	2	0	108	80	120	2.162	0	20	*
Cadmium	2.194	0.5	2	0	110	80	120	2.197	0.131	20	
Chromium	2.145	1	2	0	107	80	120	2.137	0.387	20	
Lead	2.149	1	2	0	107	80	120	2.124	1.18	20	*
Selenium	2.116	0.5	2	0	106	80	120	2.1	0.746	20	*
Silver	0.9881	2	1	0	98.8	80	120	0.9842	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

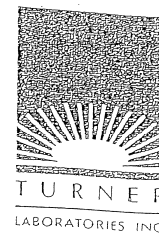
QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804701
Project: COT Silverbell

Sample ID: LCS-10590	Batch ID: 10590	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 2:02:13 PM	Prep Date: 4/19/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620167			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	102.8	20	100	0	103
				LowLimit	HighLimit
				80	120
				%RPD	RPDLimit
				0	
Sample ID: LCSD-10590	Batch ID: 10590	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/20/2008 2:06:52 PM	Prep Date: 4/19/2008
Client ID:	Run ID: ICP_080420A	SeqNo: 620168			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	106.7	20	100	0	107
				LowLimit	HighLimit
				80	120
				%RPD	RPDLimit
				102.8	3.73
				20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804701

Received By: DW

Received Date/Time: 4/18/08 12:30

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 24
13. Number of sample containers received? 5

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85711

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TURNER WORK ORDER # 0804701 DATE _____ PAGE _____ OF _____

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April 29, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT-Silverbell

Order No.: 0804781

Dear Mark Pokorny,

Turner Laboratories, Inc. received 5 samples on 4/23/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 29-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT-Silverbell
Lab Order: 0804781
Date Received: 4/23/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804781-01A	AIR #10		4/21/2008 3:55:00 PM
0804781-02A	AIR #11		4/21/2008 4:00:00 PM
0804781-03A	AIR #12		4/22/2008 4:00:00 PM
0804781-04A	AIR #13		4/22/2008 4:05:00 PM
0804781-05A	TCLP -0423-05		4/23/2008 10:20:00 AM



Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** AIR #10
Lab Order: 0804781 **Collection Date:** 4/21/2008 3:55:00 PM
Project: COT-Silverbell
Lab ID: 0804781-01A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/24/2008 3:53:47 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

2



Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** AIR #11
Lab Order: 0804781 **Collection Date:** 4/21/2008 4:00:00 PM
Project: COT-Silverbell
Lab ID: 0804781-02A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/24/2008 3:58:07 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

3



Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** AIR #12
Lab Order: 0804781 **Collection Date:** 4/22/2008 4:00:00 PM
Project: COT-Silverbell
Lab ID: 0804781-03A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/24/2008 4:02:29 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
I - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

4



Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT:	Metals Treatment Technologies	Client Sample ID:	AIR #13
Lab Order:	0804781	Collection Date:	4/22/2008 4:05:00 PM
Project:	COT-Silverbell		
Lab ID:	0804781-04A	Matrix:	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/24/2008 4:06:50 PM

Qualifiers:	ND - Not Detected at or above the PQL	PQL - Practical Quantitation Limit
	J - Analyte detected below quantitation limits	S - Spike Recovery outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	R - RPD outside accepted recovery limits
	* - Value exceeds Maximum Contaminant Level	E - Value above quantitation range

5



Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP -0423-05
Lab Order: 0804781 **Collection Date:** 4/23/2008 10:20:00 AM
Project: COT-Silverbell
Lab ID: 0804781-05A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
		SW1311/7470A				Analyst: RAD
Mercury	ND	0.0010		mg/L	1	4/24/2008 2:50:00 PM
ICP METALS, TCLP LEACHED						
		SW1311/6010B				Analyst: RAD
Arsenic	ND	1.0		mg/L	10	4/24/2008 3:09:58 PM
Barium	ND	10		mg/L	10	4/24/2008 3:09:58 PM
Cadmium	ND	0.50		mg/L	10	4/24/2008 3:09:58 PM
Chromium	ND	1.0		mg/L	10	4/24/2008 3:09:58 PM
Lead	1.1	1.0		mg/L	10	4/24/2008 3:09:58 PM
Selenium	ND	0.50		mg/L	10	4/24/2008 3:09:58 PM
Silver	ND	2.0		mg/L	10	4/24/2008 3:09:58 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

6

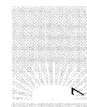
29-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804781
Client: Metals Treatment Technologies
Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804781-01A	AIR #10	4/21/2008 3:55:00 PM	Solid	ICP Metals-RCRA, Total		4/23/2008	4/24/2008 3:53:47 PM
0804781-02A	AIR #11	4/21/2008 4:00:00 PM		ICP Metals-RCRA, Total		4/23/2008	4/24/2008 3:58:07 PM
0804781-03A	AIR #12	4/22/2008 4:00:00 PM		ICP Metals-RCRA, Total		4/23/2008	4/24/2008 4:02:29 PM
0804781-04A	AIR #13	4/22/2008 4:05:00 PM		ICP Metals-RCRA, Total		4/23/2008	4/24/2008 4:06:50 PM
0804781-05A	TCLP -0423-05	4/23/2008 10:20:00 AM	Soil	ICP Metals, TCLP Leached		4/24/2008	4/24/2008 3:09:58 PM
				Mercury, TCLP Leached		4/24/2008	4/24/2008 2:50:00 PM





TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0804781
Client: Metals Treatment Technologies
Project: COT-Silverbell

Turner Laboratories, Inc. Date: 29-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID: MB-10612	Batch ID: 10612	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/24/2008 2:35:00 PM	Prep Date: 4/24/2008
Client ID:	Run ID: HGANALYZER_080424	SeqNo: 621173			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Mercury	ND	0.001			
				LowLimit	HighLimit
				RPD Ref Val	%RPD
				RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

Sample ID: **MB-10610** Batch ID: **10610** Test Code: **SW1311/6010** Units: **mg/L** Prep Date: **4/24/2008**
Client ID: **ICP_080424B** Run ID: **621210** Analysis Date: **4/24/2008 2:52:28 PM** SeqNo: **621210**

Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1									
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

Sample ID: MB-10605	Batch ID: 10605	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/24/2008 3:35:55 PM	Prep Date: 4/23/2008
Client ID:	Run ID: ICP_080424B	SeqNo: 621202			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC
Lead	ND	20			
			LowLimit	HighLimit	RPD Ref Val
			%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 0804733-01CMS	Batch ID: 10612	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/24/2008 2:45:00 PM	Prep Date: 4/24/2008
Client ID:		Run ID: HGANALYZER_080424		SeqNo: 621177	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005164	0.001	0.005	0	103
					115
					0
					%RPD
					RPDLimit
					Qual
Sample ID: 0804733-01CMSD	Batch ID: 10612	Test Code: SW1311/7470	Units: mg/L	Analysis Date: 4/24/2008 2:47:00 PM	Prep Date: 4/24/2008
Client ID:		Run ID: HGANALYZER_080424		SeqNo: 621178	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005161	0.001	0.005	0	103
					115
					0.005164
					0.0581
					20
					%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

Sample ID: 0804781-05AMS		Batch ID: 10610		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/24/2008 3:14:36 PM		Prep Date: 4/24/2008	
Client ID: TCLP-0423-05		Run ID: ICP_080424B		SeqNo: 621214							
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.206	1	2	0	110	75	125	0			J
Barium	2.319	10	2	0	116	75	125	0			*
Cadmium	2.233	0.5	2	0	112	75	125	0			
Chromium	2.171	1	2	0	109	75	125	0			
Lead	3.275	1	2	1.108	108	75	125	0			*
Selenium	2.257	0.5	2	0	113	75	125	0			J
Silver	0.967	2	1	0	96.7	75	125	0			

Sample ID: 0804781-05AMSD		Batch ID: 10610		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/24/2008 3:19:16 PM		Prep Date: 4/24/2008	
Client ID: TCLP-0423-05		Run ID: ICP_080424B		SeqNo: 621215							
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.182	1	2	0	109	75	125	2.206	1.1	20	
Barium	2.327	10	2	0	116	75	125	2.319	0	20	J
Cadmium	2.239	0.5	2	0	112	75	125	2.233	0.242	20	*
Chromium	2.159	1	2	0	108	75	125	2.171	0.55	20	
Lead	3.257	1	2	1.108	107	75	125	3.275	0.524	20	*
Selenium	2.222	0.5	2	0	111	75	125	2.257	1.57	20	
Silver	0.9721	2	1	0	97.2	75	125	0.967	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10612	Batch ID: 10612	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/24/2008 2:38:00 PM	Prep Date: 4/24/2008
Client ID:		Run ID: HGANALYZER_080424		SeqNo: 621174	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005305	0.001	0.005	0	106
					85
					115
					0
					%RPD
					RPDLimit
					Qual
Sample ID: LCSD-10612	Batch ID: 10612	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/24/2008 2:40:00 PM	Prep Date: 4/24/2008
Client ID:		Run ID: HGANALYZER_080424		SeqNo: 621175	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005328	0.001	0.005	0	107
					85
					115
					0.005305
					0.433
					20
					%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

Sample ID: LCS-10610		Batch ID: 10610		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/24/2008 2:57:00 PM		Prep Date: 4/24/2008	
Client ID:		Run ID:		ICP_080424B		SeqNo:		621211			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.065	1	2	0	103	80	120	0			J
Barium	2.124	10	2	0	106	80	120	0			J
Cadmium	2.125	0.5	2	0	106	80	120	0			*
Chromium	2.112	1	2	0	106	80	120	0			
Lead	2.11	1	2	0	106	80	120	0			
Selenium	2.155	0.5	2	0	108	80	120	0			*
Silver	0.9756	2	1	0	97.6	80	120	0			J

Sample ID: LCSD-10610		Batch ID: 10610		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/24/2008 3:01:19 PM		Prep Date: 4/24/2008	
Client ID:		Run ID:		ICP_080424B		SeqNo:		621212			
Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.057	1	2	0	103	80	120	2.065	0.353	20	
Barium	2.145	10	2	0	107	80	120	2.124	0	20	J
Cadmium	2.151	0.5	2	0	108	80	120	2.125	1.19	20	*
Chromium	2.132	1	2	0	107	80	120	2.112	0.906	20	
Lead	2.114	1	2	0	106	80	120	2.11	0.15	20	
Selenium	2.198	0.5	2	0	110	80	120	2.155	1.99	20	*
Silver	0.985	2	1	0	98.5	80	120	0.9756	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

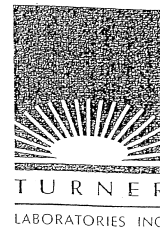
CLIENT: Metals Treatment Technologies
Work Order: 0804781
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10605	Batch ID: 10605	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/24/2008 3:40:13 PM	Prep Date: 4/23/2008
Client ID:		Run ID: ICP_080424B		SeqNo: 621203	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	105.7	20	100	0	106
					80
					120
					0
Sample ID: LCS-10605	Batch ID: 10605	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/24/2008 3:44:49 PM	Prep Date: 4/23/2008
Client ID:		Run ID: ICP_080424B		SeqNo: 621204	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	107	20	100	0	107
					80
					120
					105.7
					1.3
					20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804781

Received By: DW

Received Date/Time: 4/23/08 0:58

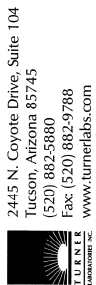
Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 21
13. Number of sample containers received? 5

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM



2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 080478 DATE 4/23/08 PAGE 1 OF 1

PROJECT NAME <u>COT - SILVERBELL #</u> CONTACT NAME <u>MARK POKORNY</u> COMPANY NAME <u>MTZ</u> ADDRESS <u>14045 W. 66th AVE ARVADA</u> <u>CO 80004</u> PHONE <u>303-998-4448</u> <u>303-698-4566</u> SAMPLER'S SIGNATURE <u>M. Pokorny</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX <input type="checkbox"/> RBD <input type="checkbox"/> TSS <input type="checkbox"/> COD <input type="checkbox"/> pH <input type="checkbox"/> Coliform <input type="checkbox"/> SDWA-MINORANALYSIS <input type="checkbox"/> WAD <input type="checkbox"/> Cyanide <input type="checkbox"/> Priority Pollutants <input type="checkbox"/> Total <input type="checkbox"/> Disolved <input type="checkbox"/> TCLP <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> VOA <input type="checkbox"/> Sem-VOA <input type="checkbox"/> Oil and Grease <input type="checkbox"/> 1664A <input type="checkbox"/> Total Petroleum Hydrocarbons <input type="checkbox"/> 8081 <input type="checkbox"/> PCBs <input type="checkbox"/> HAAS <input type="checkbox"/> TTHMS <input type="checkbox"/> Volatile Organics <input type="checkbox"/> 624/524/8260 <input type="checkbox"/> Acids <input type="checkbox"/> 625/8270 <input type="checkbox"/> Base Neutrals <input type="checkbox"/>			
NUMBER OF CONTAINERS SAMPLE ID. DATE TIME LAB ID. SAMPLE MATRIX*				REPORT REQUIREMENTS: <input checked="" type="checkbox"/> I. Routine Report <input type="checkbox"/> II. Report (includes DLP, MS, MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (includes All Raw Data) Add 10% to invoice			
1. RELINQUISHED BY: Signature <u>Mark Pokorny</u> Printed Name <u>MARK POKORNY</u> Date/Time <u>4.23.08 10:55</u>				2. RECEIVED BY: Signature _____ Printed Name _____ Date/Time _____			
3. RELINQUISHED BY: Signature _____ Printed Name _____ Date/Time _____				4. RECEIVED BY: Signature <u>Turner</u> Printed Name <u>TURNER LABORATORIES, INC.</u> Date/Time <u>4/23/08 10:55</u>			
* LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER				SPECIAL INSTRUCTIONS/COMMENTS: <u>5 DAY TURN ON AIR</u> <u>CARBIDGES</u> <u>48 TURN ON TCLP</u>			
TURNAROUND REQUIREMENTS: Standard (approx. 10 day)* Next Day <input checked="" type="checkbox"/> Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> Fax Preliminary Results Requested Report Date _____ * Working Days				INVOICE INFORMATION: Account # _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>5</u> Temperature <u>21</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice			
SAMPLE RECEIPT: Account # _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>5</u> Temperature <u>21</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice				SAMPLE RECEIPT: Account # _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>5</u> Temperature <u>21</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice			

DISTRIBUTION: WHITE - return to originator PINK - retained by originator See back of pink copy for general terms and conditions/limits of liability.



April 30, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT-Silverbell

Order No.: 0804854

Dear Mark Pokorny,

Turner Laboratories, Inc. received 7 samples on 4/25/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 30-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT-Silverbell
Lab Order: 0804854
Date Received: 4/25/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804854-01A	Air #14		4/23/2008 4:00:00 PM
0804854-02A	Air #15		4/23/2008 4:05:00 PM
0804854-03A	COT-TSP1-0425-06		4/25/2008 3:20:00 PM
0804854-04A	COT-TSP1-0425-07		4/25/2008 3:25:00 PM
0804854-05A	COT-TSP1-0425-08		4/25/2008 3:30:00 PM
0804854-06A	COT-TSP1-0425-09		4/25/2008 3:35:00 PM
0804854-07A	COT-TSP1-0425-10		4/25/2008 3:40:00 PM

Turner Laboratories, Inc.

Date: 30-Apr-08



CLIENT: Metals Treatment Technologies **Client Sample ID:** Air #14
Lab Order: 0804854 **Collection Date:** 4/23/2008 4:00:00 PM
Project: COT-Silverbell
Lab ID: 0804854-01A **Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/29/2008 8:27:21 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

2



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies Client Sample ID: Air #15
Lab Order: 0804854 Collection Date: 4/23/2008 4:05:00 PM
Project: COT-Silverbell
Lab ID: 0804854-02A Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/Filter	1	4/29/2008 8:31:39 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

3



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** COT-TSP1-0425-06
Lab Order: 0804854 **Collection Date:** 4/25/2008 3:20:00 PM
Project: COT-Silverbell
Lab ID: 0804854-03A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 11:02:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:31:08 PM
Barium	ND	10		mg/L	10	4/29/2008 5:31:08 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:31:08 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:31:08 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:31:08 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:31:08 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:31:08 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

4



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** COT-TSP1-0425-07
Lab Order: 0804854 **Collection Date:** 4/25/2008 3:25:00 PM
Project: COT-Silverbell
Lab ID: 0804854-04A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
		SW1311/7470A				Analyst: RAD
Mercury	ND	0.0010		mg/L	1	4/30/2008 11:05:00 AM
ICP METALS, TCLP LEACHED						
		SW1311/6010B				Analyst: RAD
Arsenic	ND	1.0		mg/L	10	4/29/2008 5:35:51 PM
Barium	ND	10		mg/L	10	4/29/2008 5:35:51 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:35:51 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:35:51 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:35:51 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:35:51 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:35:51 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

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Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Lab Order: 0804854
Project: COT-Silverbell
Lab ID: 0804854-05A

Client Sample ID: COT-TSP1-0425-08
Collection Date: 4/25/2008 3:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 11:07:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:40:33 PM
Barium	ND	10		mg/L	10	4/29/2008 5:40:33 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:40:33 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:40:33 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:40:33 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:40:33 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:40:33 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

6

Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** COT-TSP1-0425-09
Lab Order: 0804854 **Collection Date:** 4/25/2008 3:35:00 PM
Project: COT-Silverbell
Lab ID: 0804854-06A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
		SW1311/7470A				Analyst: RAD
Mercury	ND	0.0010		mg/L	1	4/30/2008 11:09:00 AM
ICP METALS, TCLP LEACHED						
		SW1311/6010B				Analyst: RAD
Arsenic	ND	1.0		mg/L	10	4/29/2008 5:45:16 PM
Barium	ND	10		mg/L	10	4/29/2008 5:45:16 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:45:16 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:45:16 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:45:16 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:45:16 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:45:16 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

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Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Lab Order: 0804854
Project: COT-Silverbell
Lab ID: 0804854-07A

Client Sample ID: COT-TSP1-0425-10
Collection Date: 4/25/2008 3:40:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
		SW1311/7470A				
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 11:12:00 AM
ICP METALS, TCLP LEACHED						
		SW1311/6010B				
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:49:59 PM
Barium	ND	10		mg/L	10	4/29/2008 5:49:59 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:49:59 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:49:59 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:49:59 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:49:59 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:49:59 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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30-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804854

Client: Metals Treatment Technologies

Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804854-01A	Air #14	4/23/2008 4:30:00 PM	Solid	ICP Metals-RCRA, Total	4/28/2008	4/28/2008	4/29/2008 8:27:21 PM
0804854-02A	Air #15	4/23/2008 4:35:00 PM		ICP Metals-RCRA, Total	4/28/2008	4/28/2008	4/29/2008 8:31:39 PM
0804854-03A	COT-TSP1-0425-06	4/25/2008 3:20:00 PM	Soil	ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 5:31:08 PM
				Mercury, TCLP Leached	4/29/2008	4/29/2008	4/30/2008 11:02:00 AM
0804854-04A	COT-TSP1-0425-07	4/25/2008 3:25:00 PM		ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 5:35:51 PM
				Mercury, TCLP Leached	4/29/2008	4/29/2008	4/30/2008 11:05:00 AM
0804854-05A	COT-TSP1-0425-08	4/25/2008 3:30:00 PM		ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 5:40:33 PM
				Mercury, TCLP Leached	4/29/2008	4/29/2008	4/30/2008 11:07:00 AM
0804854-06A	COT-TSP1-0425-09	4/25/2008 3:35:00 PM		ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 5:45:16 PM
				Mercury, TCLP Leached	4/29/2008	4/29/2008	4/30/2008 11:09:00 AM
0804854-07A	COT-TSP1-0425-10	4/25/2008 3:40:00 PM		ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 5:49:59 PM
				Mercury, TCLP Leached	4/29/2008	4/29/2008	4/30/2008 11:12:00 AM



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Turner Laboratories, Inc.		Date: 30-Apr-08	
CLIENT:	Metals Treatment Technologies	QC SUMMARY REPORT	
Work Order:	0804854	Method Blank	
Project:	COT-Silverbell		

Sample ID: MB-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:38:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID: HGANALYZER_080430		SeqNo: 622090	
Analyte		PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury		ND	0.001		



Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

Sample ID: MB-10626 Batch ID: 10626 Test Code: SW1311/6010 Units: mg/L Analysis Date: 4/29/2008 4:37:17 PM Prep Date: 4/29/2008
Client ID: ICP_080429A Run ID: PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD Limit Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	ND	1									
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID: MB-10618 Batch ID: 10618 Test Code: SW6010B Units: mg/Kg Analysis Date: 4/29/2008 7:47:44 PM Prep Date: 4/28/2008
Client ID: Run ID: ICP_080429A SeqNo: 621992
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead 0.02209 20 J

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Turner Laboratories, Inc. Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 0804874-01AMS	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:47:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID: HGANALYZER_080430		SecNo: 622094	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005095	0.001	0.005	0	102
				LowLimit	HighLimit
				115	115
				%RPD	RPDLimit
				0	
Sample ID: 0804874-01AMSD	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:50:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID: HGANALYZER_080430		SecNo: 622095	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005099	0.001	0.005	0	102
				LowLimit	HighLimit
				115	115
				%RPD	RPDLimit
				0.0785	20

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

Sample ID: 0804374-01AMS		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 4:59:05 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 622023							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.27	1	2	0	113	75	125	0			J
Barium	2.284	10	2	0	114	75	125	0			J
Cadmium	2.211	0.5	2	0	111	75	125	0			*
Chromium	2.19	1	2	0	109	75	125	0			
Lead	2.179	1	2	0	109	75	125	0			
Selenium	2.246	0.5	2	0	112	75	125	0			*
Silver	0.9474	2	1	0	94.7	75	125	0			J

Sample ID: 0804374-01AMSD		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 5:03:46 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 622024							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.233	1	2	0	112	75	125	2.27	1.63	20	J
Barium	2.298	10	2	0	115	75	125	2.284	0	20	J
Cadmium	2.228	0.5	2	0	111	75	125	2.211	0.779	20	*
Chromium	2.186	1	2	0	109	75	125	2.19	0.161	20	
Lead	2.185	1	2	0	109	75	125	2.179	0.31	20	
Selenium	2.221	0.5	2	0	111	75	125	2.246	1.11	20	*
Silver	0.9515	2	1	0	95.1	75	125	0.9474	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

Sample ID: 0804855-03AMS		Batch ID: 10618		Test Code: SW6010B		Units: mg/Kg		Analysis Date: 4/29/2008 8:10:19 PM				Prep Date: 4/28/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 621996									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Lead	51.86	10	50	22.48	58.8	75	125	0			S		

Sample ID: 0804855-03AMS		Batch ID: 10618		Test Code: SW6010B		Units: mg/Kg		Analysis Date: 4/29/2008 8:14:33 PM				Prep Date: 4/28/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 621997									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Lead	53.13	10	50	22.48	61.3	75	125	51.86	2.42	20	S		

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:40:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID: HGANALYZER_080430		SeqNo: 622091	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.005225	0.001	0.005	0	104 85 115 0
Sample ID: LCSD-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:43:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID: HGANALYZER_080430		SeqNo: 622092	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.0052	0.001	0.005	0	104 85 115 0.005225 0.48 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10626		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 4:41:33 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 622020							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.095	1	2	0	105	80	120	0			J
Barium	2.126	10	2	0	106	80	120	0			*
Cadmium	2.138	0.5	2	0	107	80	120	0			
Chromium	2.151	1	2	0	108	80	120	0			
Lead	2.095	1	2	0	105	80	120	0			*
Selenium	2.202	0.5	2	0	110	80	120	0			
Silver	0.9622	2	1	0	96.2	80	120	0			J

Sample ID: LCSD-10626		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 4:45:52 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A		SeqNo: 622021							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.028	1	2	0	101	80	120	2.095	3.25	20	J
Barium	2.113	10	2	0	106	80	120	2.126	0	20	*
Cadmium	2.114	0.5	2	0	106	80	120	2.138	1.1	20	
Chromium	2.131	1	2	0	107	80	120	2.151	0.938	20	
Lead	2.081	1	2	0	104	80	120	2.095	0.649	20	*
Selenium	2.175	0.5	2	0	109	80	120	2.202	1.22	20	
Silver	0.9614	2	1	0	96.1	80	120	0.9622	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

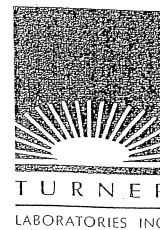
QC SUMMARY REPORT
Laboratory Control Spike - generic

CLIENT: Metals Treatment Technologies
Work Order: 0804854
Project: COT-Silverbell

Sample ID: LCS-10618	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/29/2008 7:52:05 PM	Prep Date: 4/28/2008
Client ID:		Run ID: ICP_080429A		SeqNo: 621993	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	106.2	20	100	0.02209	106 80 120 0
Sample ID: LCSD-10618	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 4/29/2008 7:56:38 PM	Prep Date: 4/28/2008
Client ID:		Run ID: ICP_080429A		SeqNo: 621994	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	103.7	20	100	0.02209	104 80 120 106.2 2.34 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804854

Received By: DW

Received Date/Time: 4/29/08 1055

Delivered by: client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 16
13. Number of sample containers received? 7

Additional Comments:

Client aware no one was present to
approve RUSH

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

0804854

Company Name/Address: MT2 14045 W. 66th Ave. Arvada, CO 80004		Alternate billing information: Report to: MARK POKORNY (MT2) Email to: mpokorny@mt2.com Project Description: COT-SILVERBELL City/State Collected: Tucson AZ Phone: (303) 456-6977 Client Project #: _____ FAX: (303) 456-6998 ESC Key: _____ Collected by: _____ Site/Facility ID#: _____ P.O.#: _____		Analysis/Container/Preservative Prepared by: ENVIRONMENTAL SCIENCE CORP. 12065 Lebanon Road Mt. Juliet, TN 37122 Phone (615) 758-5858 Phone (800) 767-5859 FAX (615) 758-5859 CoCode: MT2WRCO (lab use only) Template/Prelogin Shipped Via: Remarks/Contaminant Sample # (lab only)	
--	--	--	--	---	--

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Date Results Needed:		No. of Cntrs	Remarks
						Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	FAX? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		
AIR#14	-	filter		4.23.08	1600				
AIR#15	-	↓		4.23.08	1605				
COT-TSP1-0425-06	0	SL	-	4.25.08	1520				
COT-TSP1-0425-07	↓	SL	-	4.25.08	1525				
COT-TSP1-0425-08	↓	SL	-	4.25.08	1530				
COT-TSP1-0425-09	↓	SL	-	4.25.08	1535				
COT-TSP2-0425-10	↓	SL	-	4.25.08	1540				

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other: _____
 Remarks: _____

Relinquished by: (Signature) 	Date: 4-25-08 Time: 4:40	Received by: (Signature) 	Date: 4-25-08 Time: 4:55	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier Temp: 160 Date: _____ Time: _____	Condition: (lab use only) CoC Status Intact: Y ___ N ___ NA pH Checked: NCF:
----------------------------------	-----------------------------	------------------------------	-----------------------------	---	--



April 30, 2008

Mark Pokorny
Metals Treatment Technologies
14045 W 66th Ave
Arvada, CO 80004
TEL: (303) 994-4948
FAX (303) 456-6998

RE: COT-Silverbell

Order No.: 0804874

Dear Mark Pokorny,

Turner Laboratories, Inc. received 5 samples on 4/28/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

Turner Laboratories, Inc.

Date: 30-Apr-08



CLIENT: Metals Treatment Technologies
Project: COT-Silverbell
Lab Order: 0804874
Date Received: 4/28/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804874-01A	TCLP-0428-11		4/28/2008 1:15:00 PM
0804874-02A	TCLP-0428-12		4/28/2008 1:20:00 PM
0804874-03A	TCLP-0428-13		4/28/2008 1:23:00 PM
0804874-04A	TCLP-0428-14		4/28/2008 1:28:00 PM
0804874-05A	TCLP-0428-15		4/28/2008 1:45:00 PM



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Lab Order: 0804874
Project: COT-Silverbell
Lab ID: 0804874-01A

Client Sample ID: TCLP-0428-11
Collection Date: 4/28/2008 1:15:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 10:45:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 4:54:26 PM
Barium	ND	10		mg/L	10	4/29/2008 4:54:26 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 4:54:26 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 4:54:26 PM
Lead	ND	1.0		mg/L	10	4/29/2008 4:54:26 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 4:54:26 PM
Silver	ND	2.0		mg/L	10	4/29/2008 4:54:26 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

2



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0428-12
Lab Order: 0804874 **Collection Date:** 4/28/2008 1:20:00 PM
Project: COT-Silverbell
Lab ID: 0804874-02A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 10:52:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:12:43 PM
Barium	ND	10		mg/L	10	4/29/2008 5:12:43 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:12:43 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:12:43 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:12:43 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:12:43 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:12:43 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

3



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0428-13
Lab Order: 0804874 **Collection Date:** 4/28/2008 1:23:00 PM
Project: COT-Silverbell
Lab ID: 0804874-03A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 10:55:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:17:24 PM
Barium	ND	10		mg/L	10	4/29/2008 5:17:24 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:17:24 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:17:24 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:17:24 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:17:24 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:17:24 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

4



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0428-14
Lab Order: 0804874 **Collection Date:** 4/28/2008 1:28:00 PM
Project: COT-Silverbell
Lab ID: 0804874-04A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED		SW1311/7470A		Analyst: RAD		
Mercury	ND	0.0010		mg/L	1	4/30/2008 10:57:00 AM
ICP METALS, TCLP LEACHED		SW1311/6010B		Analyst: RAD		
Arsenic	ND	1.0		mg/L	10	4/29/2008 5:22:04 PM
Barium	ND	10		mg/L	10	4/29/2008 5:22:04 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:22:04 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:22:04 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:22:04 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:22:04 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:22:04 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

5



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies **Client Sample ID:** TCLP-0428-15
Lab Order: 0804874 **Collection Date:** 4/28/2008 1:45:00 PM
Project: COT-Silverbell
Lab ID: 0804874-05A **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP LEACHED						
Mercury	ND	0.0010		mg/L	1	Analyst: RAD 4/30/2008 11:00:00 AM
ICP METALS, TCLP LEACHED						
Arsenic	ND	1.0		mg/L	10	Analyst: RAD 4/29/2008 5:26:27 PM
Barium	ND	10		mg/L	10	4/29/2008 5:26:27 PM
Cadmium	ND	0.50		mg/L	10	4/29/2008 5:26:27 PM
Chromium	ND	1.0		mg/L	10	4/29/2008 5:26:27 PM
Lead	ND	1.0		mg/L	10	4/29/2008 5:26:27 PM
Selenium	ND	0.50		mg/L	10	4/29/2008 5:26:27 PM
Silver	ND	2.0		mg/L	10	4/29/2008 5:26:27 PM

Qualifiers: ND - Not Detected at or above the PQL PQL - Practical Quantitation Limit
J - Analyte detected below quantitation limits S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank R - RPD outside accepted recovery limits
* - Value exceeds Maximum Contaminant Level E - Value above quantitation range

6

30-Apr-08

Turner Laboratories, Inc.

Lab Order: 0804874
Client: Metals Treatment Technologies
Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804874-01A	TCLP-0428-11	4/28/2008 1:15:00 PM	Soil	ICP Metals, TCLP Leached	4/29/2008	4/29/2008	4/29/2008 4:54:26 PM
0804874-02A	TCLP-0428-12	4/28/2008 1:20:00 PM		Mercury, TCLP Leached		4/29/2008	4/30/2008 10:45:00 AM
				ICP Metals, TCLP Leached		4/29/2008	4/29/2008 5:12:43 PM
0804874-03A	TCLP-0428-13	4/28/2008 1:23:00 PM		Mercury, TCLP Leached		4/29/2008	4/30/2008 10:52:00 AM
				ICP Metals, TCLP Leached		4/29/2008	4/29/2008 5:17:24 PM
0804874-04A	TCLP-0428-14	4/28/2008 1:28:00 PM		Mercury, TCLP Leached		4/29/2008	4/30/2008 10:55:00 AM
				ICP Metals, TCLP Leached		4/29/2008	4/29/2008 5:22:04 PM
0804874-05A	TCLP-0428-15	4/28/2008 1:45:00 PM		Mercury, TCLP Leached		4/29/2008	4/30/2008 10:57:00 AM
				ICP Metals, TCLP Leached		4/29/2008	4/29/2008 5:26:27 PM
				Mercury, TCLP Leached		4/29/2008	4/30/2008 11:00:00 AM



Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies

Work Order: 0804874

Project: COT-Silverbell

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:38:00 AM	Prep Date: 4/29/2008
Client ID:	Run ID: HGANALYZER_080430	SeqNo: 622090			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	ND	0.001			
				LowLimit	HighLimit
				RPD Ref Val	%RPD
					RPDLimit
					Qual

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1

QC SUMMARY REPORT
Method Blank

CLIENT: Metals Treatment Technologies
Work Order: 0804874
Project: COT-Silverbell

Sample ID: **MB-10626** Batch ID: **10626** Test Code: **SW1311/6010** Units: **mg/L** Analysis Date: **4/29/2008 4:37:17 PM** Prep Date: **4/29/2008**
Client ID: Run ID: **ICP_080429A** SeqNo: **622019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1									
Barium	ND	10									
Cadmium	ND	0.5									
Chromium	ND	1									
Lead	ND	1									
Selenium	ND	0.5									
Silver	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Date: 30-Apr-08

Turner Laboratories, Inc.

CLIENT: Metals Treatment Technologies
Work Order: 0804874
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 0804874-01AMS	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:47:00 AM	Prep Date: 4/29/2008
Client ID: TCLP-0428-11		Run ID: HGANALYZER_080430		SeqNo: 622094	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005095	0.001	0.005	0	102
				LowLimit	HighLimit
				85	115
				%RPD	RPDLimit
				0	
				Qual	
Sample ID: 0804874-01AMS	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:50:00 AM	Prep Date: 4/29/2008
Client ID: TCLP-0428-11		Run ID: HGANALYZER_080430		SeqNo: 622095	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Mercury	0.005099	0.001	0.005	0	102
				LowLimit	HighLimit
				85	115
				%RPD	RPDLimit
				0.0785	20
				Qual	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

3

QC SUMMARY REPORT
Sample Matrix Spike

CLIENT: Metals Treatment Technologies
Work Order: 0804874
Project: COT-Silverbell

Sample ID: 0804874-01AMS		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 4:59:05 PM		Prep Date: 4/29/2008	
Client ID: TCLP-0428-11		Run ID: ICP_080429A		SeqNo: 622023							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.27	1	2	0	113	75	125	0			
Barium	2.284	10	2	0	114	75	125	0			J
Cadmium	2.211	0.5	2	0	111	75	125	0			*
Chromium	2.19	1	2	0	109	75	125	0			
Lead	2.179	1	2	0	109	75	125	0			
Selenium	2.246	0.5	2	0	112	75	125	0			*
Silver	0.9474	2	1	0	94.7	75	125	0			J

Sample ID: 0804874-01AMSD		Batch ID: 10626		Test Code: SW1311/6010		Units: mg/L		Analysis Date: 4/29/2008 5:03:46 PM		Prep Date: 4/29/2008	
Client ID: TCLP-0428-11		Run ID: ICP_080429A		SeqNo: 622024							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.233	1	2	0	112	75	125	2.27	1.63	20	
Barium	2.298	10	2	0	115	75	125	2.284	0	20	J
Cadmium	2.228	0.5	2	0	111	75	125	2.211	0.779	20	*
Chromium	2.186	1	2	0	109	75	125	2.19	0.161	20	
Lead	2.185	1	2	0	109	75	125	2.179	0.31	20	
Selenium	2.221	0.5	2	0	111	75	125	2.246	1.11	20	*
Silver	0.9515	2	1	0	95.1	75	125	0.9474	0	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 30-Apr-08

CLIENT: Metals Treatment Technologies
Work Order: 0804874
Project: COT-Silverbell

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:40:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID:	HGANALYZER_080430	SeqNo: 622091	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPD.Limit Qual
Mercury	0.006225	0.001	0.005	0	104 85 115 0
Sample ID: LCSD-10631	Batch ID: 10631	Test Code: SW13117470	Units: mg/L	Analysis Date: 4/30/2008 10:43:00 AM	Prep Date: 4/29/2008
Client ID:		Run ID:	HGANALYZER_080430	SeqNo: 622092	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPD.Limit Qual
Mercury	0.0062	0.001	0.005	0	104 85 115 0.006225 0.48 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT
Laboratory Control Spike - generic

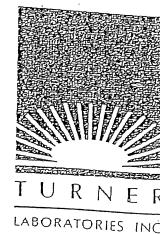
CLIENT: Metals Treatment Technologies
Work Order: 0804874
Project: COT-Silverbell

Sample ID: LCS-10626		Batch ID: 10626	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/29/2008 4:41:33 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Arsenic	2.095	1	2	0	0	105	80	120
Barium	2.126	10	2	0	0	106	80	120
Cadmium	2.138	0.5	2	0	0	107	80	120
Chromium	2.151	1	2	0	0	108	80	120
Lead	2.095	1	2	0	0	105	80	120
Selenium	2.202	0.5	2	0	0	110	80	120
Silver	0.9622	2	1	0	0	96.2	80	120

Sample ID: LCSD-10626		Batch ID: 10626	Test Code: SW1311/6010	Units: mg/L	Analysis Date: 4/29/2008 4:45:52 PM		Prep Date: 4/29/2008	
Client ID:		Run ID: ICP_080429A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Arsenic	2.028	1	2	0	0	101	80	120
Barium	2.113	10	2	0	0	106	80	120
Cadmium	2.114	0.5	2	0	0	106	80	120
Chromium	2.131	1	2	0	0	107	80	120
Lead	2.081	1	2	0	0	104	80	120
Selenium	2.175	0.5	2	0	0	109	80	120
Silver	0.9614	2	1	0	0	96.1	80	120

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.
SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804874

Received By: DW

Received Date/Time: 4/28/08 14:00

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 10
13. Number of sample containers received? 5

Additional Comments:

2445 NORTH COYOTE DRIVE ■ SUITE #104 ■ TUCSON, ARIZONA 85745 ■ 520 882-5880 ■ FAX # 520 882-9788

TURNER
DONATIONS INC.

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 0804874 DATE _____ PAGE _____ OF _____

[illegible]

See back of pink copy for general terms and conditions/limits of liability.

PINK - retained by originator

DISTRIBUTION: WHITE - return to originator



Appendix C

Landfill Summary



FAX Cover Sheet

CITY OF TUCSON
ENVIRONMENTAL SERVICES
LOS REALES LANDFILL
PO BOX 27210
TUCSON, AZ 85726-7210
(520) 791-4183
(520) 791-5642 (FAX)

DATE: 5/6/08

Number of pages including cover sheet: 5

TO:

MARC POIKORNY

Phone number: 303 456 6998
FAX number:

FROM:

CHRIS DINEAR

SUBJECT: LOS REALES LANDFILL REPORT

REMARKS:

P.1/5

To: 913034566998

7915642

May-06-2008 08:55 From:

MAY-06-2008 08:55 From:

7915642

To: 913034566998

P.2/5

Page 1 of 4

Online Report
001 Landfill

5/1/2008 Through 5/2/2008

5/5/2008
8:59:11AM

Truck	Customer	Source	Product	Profile	Date	TimeIn	TimeOut	Gross	Net	Yards/Unit	Total Cost	Unit	Est
87360 1 2	Richard	COM	TEMP 04488	1	150	05/01/2008 7:03A	7:16A	45,780	29,390	0.00	\$675.97	M	G
87365 1 1	Richard	COM	TEMP1 04488	1	150	05/01/2008 7:06A	7:19A	42,900	26,420	0.00	\$607.66	G	G
87370 1 1	Richard	COM	TEMP2 04488	1	150	05/01/2008 7:09A	7:23A	38,990	23,630	0.00	\$543.49	G	G
87373 1 1	Richard	COM	TEMP3 04488	1	150	05/01/2008 7:11A	7:24A	38,980	23,150	0.00	\$532.45	G	G
87374 1 1	Richard	COM	TEMP5 04488	1	150	05/01/2008 7:12A	7:26A	45,320	28,140	0.00	\$647.22	G	G
87375 1 1	Richard	COM	TEMP6 04488	1	150	05/01/2008 7:13A	7:27A	46,370	29,110	0.00	\$669.53	G	G
87449 1 3	Cassandra	COM	TEMP5 04488	1	150	05/01/2008 8:44A	8:44A	39,080	23,250	0.00	\$334.75	M	G
87451 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 8:46A	8:46A	38,410	23,050	0.00	\$330.15	M	G
87452 1 2	Richard	COM	TEMP6 04488	1	150	05/01/2008 8:49A	8:49A	41,280	24,020	0.00	\$552.46	M	G
87453 1 1	Cassandra	COM	TEMP3 04488	1	150	05/01/2008 8:36A	8:50A	40,450	24,090	0.00	\$554.07	M	G
87459 1 2	Richard	COM	TEMP5 04488	1	150	05/01/2008 8:53A	8:53A	39,020	21,840	0.00	\$302.32	M	G
87467 1 1	Cassandra	COM	TEMP4 04488	1	150	05/01/2008 8:42A	8:59A	39,740	25,530	0.00	\$387.19	G	G
87525 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 9:58A	9:58A	36,630	20,150	0.00	\$463.45	M	G
87527 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 10:00A	10:00A	41,060	24,580	0.00	\$565.34	M	G
87530 1 3	Raul	COM	TEMP3 04488	1	150	05/01/2008 10:01A	10:01A	35,810	19,980	0.00	\$459.54	M	G
87536 1 3	Raul	COM	TEMP2 04488	1	150	05/01/2008 10:06A	10:06A	41,110	23,750	0.00	\$569.25	M	G
87540 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 10:08A	10:08A	39,040	23,680	0.00	\$544.64	M	G
87541 1 3	Raul	COM	TEMP5 04488	1	150	05/01/2008 10:08A	10:08A	39,970	25,760	0.00	\$592.48	M	G
87547 1 2	Richard	COM	TEMP6 04488	1	150	05/01/2008 10:16A	10:16A	36,380	19,120	0.00	\$439.76	M	G
87552 1 2	Richard	COM	TEMP5 04488	1	150	05/01/2008 10:18A	10:18A	44,750	27,570	0.00	\$634.11	M	G
87624 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 11:22A	11:22A	34,190	18,360	0.00	\$422.28	M	G
87636 1 2	Richard	COM	TEMP1 04488	1	150	05/01/2008 11:26A	11:26A	41,430	25,000	0.00	\$575.00	M	G
87638 1 2	Richard	COM	TEMP4 04488	1	150	05/01/2008 11:28A	11:28A	40,700	26,500	0.00	\$609.50	M	G
87639 1 3	Raul	COM	TEMP3 04488	1	150	05/01/2008 11:28A	11:28A	34,740	18,380	0.00	\$422.74	M	G
87645 1 2	Richard	COM	TEMP5 04488	1	150	05/01/2008 11:34A	11:34A	36,820	19,640	0.00	\$451.72	M	G
87646 1 2	Richard	COM	TEMP2 04488	1	150	05/01/2008 11:35A	11:35A	42,890	27,530	0.00	\$633.19	M	G
87652 1 2	Richard	COM	TEMP6 04488	1	150	05/01/2008 11:42A	11:42A	38,510	21,250	0.00	\$488.75	M	G
87707 1 2	Cassandra	COM	TEMP2 04488	1	150	05/01/2008 12:43P	12:43P	34,050	17,570	0.00	\$404.11	M	G
87708 1 3	Richard	COM	TEMP3 04488	1	150	05/01/2008 12:44P	12:44P	39,720	23,360	0.00	\$537.28	M	G
87721 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 12:51P	12:51P	39,720	23,360	0.00	\$537.28	M	G
87724 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 12:51P	12:51P	39,720	23,360	0.00	\$537.28	M	G
87730 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 12:53P	12:53P	34,680	17,500	0.00	\$402.36	M	G
87743 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 12:57P	12:57P	36,810	17,500	0.00	\$402.36	M	G
87766 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 1:06P	1:06P	36,810	17,500	0.00	\$402.36	M	G
87825 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 1:27P	1:27P	35,590	18,240	0.00	\$419.52	M	G
87827 1 3	Richard	COM	TEMP3 04488	1	150	05/01/2008 1:04P	2:04P	29,270	12,790	0.00	\$294.17	M	G
87853 1 2	Cassandra	COM	TEMP2 04488	1	150	05/01/2008 2:06P	2:05P	28,410	12,050	0.00	\$277.15	M	G
87856 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 2:21P	2:21P	28,810	11,630	0.00	\$267.49	M	G
87859 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 2:24P	2:24P	39,340	14,200	0.00	\$578.68	M	G
87859 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 2:28P	2:28P	34,990	15,870	0.00	\$438.61	M	G
87883 1 2	Cassandra	COM	TEMP1 04488	1	150	05/01/2008 2:46P	2:46P	34,690	17,340	0.00	\$398.82	M	G

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7915642

To: 913034566998

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Online Report
001 Landfill

5/1/2008 Through 5/2/2008

5/5/2008
8:59:11AM

Ticket/Load	WSid	User	Header	Truck	Customer	Source	Product	Profile	Date	TimeIn	TimeOut	Gross	Net	Yards/Unit	Total	Cost	Y	M	E
687903	1.3	Richard	COM	TEMP	04488	1	150		05/01/2008	3:37P	3:46P	35.600	16.360	0.00	\$448.50	\$448.50	M	G	
687949	1.2	Casandra	COM	TEMP	04488	1	150		05/01/2008	4:06P	4:06P	37.640	14.210	0.00	\$525.09	\$525.09	M	G	
687972	1.2	Casandra	COM	TEMP	04488	1	150		05/01/2008	4:07P	4:07P	32.830	15.830	0.00	\$391.00	\$391.00	M	G	
687978	1.2	Casandra	COM	TEMP	04488	1	150		05/01/2008	3:56P	4:11P	35.960	17.210	0.00	\$431.25	\$431.25	M	G	
688022	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	7:03A	7:03A	40.800	15.360	0.00	\$385.12	\$385.12	M	G	
688025	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	7:05A	7:05A	34.040	16.780	0.00	\$385.94	\$385.94	M	G	
688027	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	7:07A	7:07A	39.810	15.830	0.00	\$551.54	\$551.54	M	G	
688029	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	7:08A	7:08A	20.300	17.210	0.00	\$71.07	\$71.07	M	G	
688033	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	7:10A	7:10A	40.960	16.360	0.00	\$615.25	\$615.25	M	G	
688045	1.1	Richard	COM	TEMP	04488	1	150		05/02/2008	7:37P	7:22A	35.390	16.560	0.00	\$433.09	\$433.09	M	G	
688046	1.1	Richard	COM	TEMP	04488	1	150		05/02/2008	8:22A	8:22A	35.380	16.560	0.00	\$432.86	\$432.86	M	G	
688113	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	8:29A	8:29A	35.210	16.360	0.00	\$434.01	\$434.01	M	G	
688123	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	8:33A	8:33A	41.090	15.360	0.00	\$591.79	\$591.79	M	G	
688131	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	8:35A	8:35A	34.790	16.560	0.00	\$419.25	\$419.25	M	G	
688135	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	8:39A	8:39A	40.400	14.210	0.00	\$606.97	\$606.97	M	G	
688137	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	8:46A	8:46A	37.390	15.830	0.00	\$495.85	\$495.85	M	G	
688144	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	8:50A	8:50A	38.940	17.260	0.00	\$498.64	\$498.64	M	G	
688151	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	9:00A	9:00A	43.180	17.210	0.00	\$597.31	\$597.31	M	G	
688204	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	9:45A	9:45A	36.230	16.360	0.00	\$457.01	\$457.01	M	G	
688212	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	9:50A	9:50A	33.670	16.560	0.00	\$398.13	\$398.13	M	G	
688221	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	9:58A	9:58A	35.930	15.830	0.00	\$462.30	\$462.30	M	G	
688222	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	10:06A	10:06A	39.330	14.210	0.00	\$577.76	\$577.76	M	G	
688233	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	10:09A	10:09A	41.210	15.360	0.00	\$595.01	\$595.01	M	G	
688237	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	10:19A	10:19A	37.630	17.260	0.00	\$468.51	\$468.51	M	G	
688252	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	11:02A	11:02A	40.590	16.360	0.00	\$555.45	\$555.45	M	G	
688319	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	11:16A	11:16A	19.540	16.560	0.00	\$68.54	\$68.54	M	G	
688333	1.2	Pauline	COM	TEMP	04488	1	150		05/02/2008	11:17A	11:17A	35.700	15.830	0.00	\$457.01	\$457.01	M	G	
688335	1.3	Casandra	COM	TEMP	04488	1	150		05/02/2008	11:50A	11:50A	38.980	14.210	0.00	\$569.71	\$569.71	M	G	
688375	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	12:14P	12:26P	40.710	17.350	0.00	\$537.28	\$537.28	M	G	
688432	1.2	Richard	COM	TEMP	04488	1	150		05/02/2008	12:43P	12:43P	36.570	16.360	0.00	\$464.83	\$464.83	M	G	

1 Total Tickets 71 Total Loads 71

\$34,984.15

Total Product Cost:

1,521.05

In Tons:

Out Tons:

0.00

1,521.05

Total In&Out Tons:



MAY-06-2008 08:56 From:

7915642

To: 913034566998

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5/5/2008 8:59:11 AM

Online Report
001 Landfill
5/1/2008 Through 5/2/2008

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Ticket/Land	W/Sid	Usr	Hauler	Truck	Customer	Source	Product	Profile	Date	TimeIn	TimeOut	Gross	Tare	Net	Yards/Unit	Total	Cont	Y	M	E
Total Tickets 71 Total Loads 71																				

In Tons : 1,521.05
Out Tons : 0.00
Total In&Out Tons : 1,521.05

Total Product Cost : \$34,984.15



MAY-06-2008 08:56 From:

7915642

To:913034566998

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**Online Report
001 Landfill**

5/1/2008 Through 5/2/2008

5/5/2008
8:59:11AM

Date From :	5/1/2008 12:00:00AM	Operator :	**ALL**
Date To :	5/2/2008 11:59:59PM	Workstation :	**ALL**
Company :		Trans Type :	**ALL**
Profile :		Inbound :	True
Hauler :		Outbound :	True
Truck :		Voids :	Exclude
Customer :	04488	Unit Wt. Produces :	Include
BillTo :			
Route :			
Source :			
Destination :			
Product :			
		Tax :	
		Program :	
		Container :	
		Driver :	
		Stockpile :	
		Category :	
		GenericA :	
		GenericB :	
		Coal :	
		Fee :	
		Price Rounding :	\$0.01

Appendix D

Stormwater Permit

Form#
appr031c



ADEQ

Notice of Intent (NOI) for Storm Water Discharges Associated with
Construction Activity Under the AZPDES General Permit

Arizona Department Of Environmental Quality
1110 West Washington Street, 5415A-1 • Phoenix, Arizona 85007
(Office) 602-771-4632 • (Fax) 602-771-4528

Notice of Intent (NOI) Certificate

Authorization Number: AZCON-32665					
Approval Date: 03/12/2008					
Application Information:					
ID Number:	32665	Name:	NOI-SILVERBELL FIRING RANGE		
Inventory #	105986	Type:	GEN-CONST		
AZPDES #:	AZCON-32665	Received:	03/12/2008		
Owner/Operator:					
First:	MARK	Last:	POKORNY		
Business:	METALS TREATMENT TECHNOLOGIES (MT2)		Phone:	(303) 994-4948	
Address:	14045 W 66TH AVENUE		Fax:	(303) 456-6998	
City:	ARVADA	State:	CO	Zip:	80004
Facility/Site:					
Start Date:	03/24/2008	Business:	SILVERBELL FIRING RANGE	Phone:	(303) 994-4948
End Date:	04/18/2008	Address:	3200 N SILVERBELL ROAD	County:	MARICOPA
Facility Type:	COMMERCIAL	City:	TUCSON, AZ 85745		
Access:	1 BLOCK EAST OF SILVERBELL				
Subdivision/Other Permits:				Other IDs:	
Subdivision Approval? <input checked="" type="checkbox"/> NA					
Latitude:	321554.27	1/4 mile of impaired or unique water?	No	Total acres Disturbed	
Longitude:	1110042.60	Discharge into municipal conveyance?	No	Project	Operations
Watershed:	SANTA CRUZ	System Owner (Conveyance):		2	1.5
Closest Water	SANTA CRUZ RIVER				
Perennial Water:	Sabino Creek				
Storm Water Pollution Prevention Plan (SWPPP):					
First:	MARK	Last:	POKORNY	Phone:	(303) 994-4948
Business:	SILVERBELL FIRING RANGE		SWPPP Confirmation:	<input checked="" type="checkbox"/> Y	
Address:	3200 N SILVERBELL ROAD		SWPPP Submitted:	<input type="checkbox"/>	
City:	TUCSON	State:	AZ	Zip:	85745
Certification:					
First:	MARK	Last:	POKORNY	Phone:	(303) 994-4948
Business:	METALS TREATMENT TECHNOLOGIES (MT2)		Certification Signed	<input checked="" type="checkbox"/> Y	
Address:	14045 W 66TH AVENUE				
City:	ARVADA	State:	CO	Zip:	80004

Appendix E

Air Permit



PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM
33 NORTH STONE AVE
TUCSON, ARIZONA 85701
PHONE: (520) 740-3340 FAX: (520) 243-7340
www.deq.pima.gov

Air Quality Activity Permit Receipt

Issued To	Mark Pokorny	Account Number	0
	14045 W. 66th Ave.	Check Number	50558
	Arvada	C.O.	80004-

Permit Number	5516	Effective Date	3/13/2008
Site Location	3200 N. Silverbell Road		
	COT Firing Range		
	Silverbell & Goret Rd		

Activity	Amount	Fee
Landstripping (ac)	1+ to 2 acres	\$100.00
Trenching (ft)	- none -	\$0.00
Road Construction (ft)	- none -	\$0.00
Blasting	- none -	\$0.00
Multiple Activities (ac)	- none -	\$0.00
Amount Paid		\$100.00



**NOTICE OF INTENT TO TERMINATE
AIR QUALITY ACTIVITY PERMIT**

Pima County Department of Environmental Quality
33 N. Stone Ave. -7th Floor
Tucson, AZ 85701
Phone: (520) 740-3340 Fax: (520) 243-7340

PERMIT NUMBER: 5516 DATE: 5.15.2008

PERMITTEE NAME (as stated in permit): MARK POKORNY

PROJECT LOCATION: 3200 N. SILVERBELL ROAD
TUCSON, AZ 85745

TOWNSHIP: _____ RANGE: _____ SECTION: _____

REASON FOR TERMINATION: PROJECT IS COMPLETE.

For PDEQ to consider terminating your Air Quality Activity Permit, you must first demonstrate that you have permanently stabilized the soil that was disturbed. Pima County Code Title 17, Section 17.16.080 states:

No vacant lot, housing plot, building site, parking area, sales lot, playground, livestock feedlot, or other open area other than those used solely for soil-cultivation or vegetative-crop-producing and harvesting agricultural purposes shall be used or left in such a state after construction, alteration, clearing, leveling, or excavation that naturally induced wind blowing over the area causes a violation of section 17.16.050. Dust emissions must be permanently suppressed by landscaping, covering with gravel or vegetation, paving, or applying equivalently effective controls.

I, MARK POKORNY, (NAME OF RESPONSIBLE OFFICIAL) verify that no further soil disturbing construction activities will be endorsed by the permittee under this permit at the above referenced location. All project soils designated by this permit have been permanently stabilized by the following method(s):

☐ BUILDINGS

☒ LANDSCAPING

☐ PAVING

☐ GRAVEL

☐ DUST PALLIATIVE

☐ OTHER:

SIGNATURE OF RESPONSIBLE OFFICIAL: MARK POKORNY

DATE: 5.15.2008

FIRM & TITLE: METALS TREATMENT TECHNOLOGIES

SENIOR ENVIRONMENTAL SCIENTIST

*Mail or fax your Permit Completion Termination to the address or number listed above.



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Surface Water Section / Permits Unit / Stormwater Program
1110 West Washington Street, 5415A-1 • Phoenix, Arizona 85007
(Office) 602-771-4632 • (Fax) 602-771-4528 • www.azdeq.gov



Stephen A. Owens
Director

May 8, 2008

Owner/Operator:
MARK POKORNY
MT2 METALS TREATMENT TECHNOLOGIES
14045 W 66TH AVENUE
ARVADA, CO 80004

Facility Information:
PHOENIX TRAP & SKEET
12450 W INDIAN SCHOOL ROAD
AVONDALE, AZ 85323
Lat: 332939 Long: 1121930

Termination Number: AZCON-23076-T

NOTICE OF TERMINATION ACKNOWLEDGEMENT

Dear Owner/Operator:

Your Notice of Termination (NOT) to cease coverage under the AZPDES Stormwater Construction General Permit (AZG2003-001) for the above-referenced project has been processed by the Arizona Department of Environmental Quality. Authorization to discharge at this site terminates at midnight on the date of this letter. By submission of this NOT form, you are certifying that you have reviewed the terms and conditions of the construction permit and have determined that the site no longer requires coverage.

Please keep this document for your records and use the termination number for any correspondence.

Please contact Shirley Conard at (602)771-4632 if you have any questions regarding this letter. If you have technical questions concerning the stormwater program, please contact Sara Konrad at (602)771-4449.

Northern Regional Office
1801 W. Route 66, Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 W. Congress Street, Suite 433 • Tucson, AZ 85701
(520) 628-6733

Printed on recycled paper

Appendix F

Photographs

Appendix G

EcoBond Pb MSDS



Silverbell Range – Pre O&M



Silverbell Range – Pre O&M



Silverbell Range – Pre O&M



EcoBond Treatment of 2° Berm Top



EcoBond Treatment of Range Floor



Screening of Range Soil



Excavation of West Side Slope Area



Silverbell Firing Range



Close up of Screened Soil



Firing Range After O&M



Range Construction Debris Prior to Disposa



Completed East Side Slope Area



Completed Silverbell Firing Range O&M

Appendix G

EcoBond Pb MSDS

Material Safety Data Sheet ECOBOND® Pb

1 SECTION 1 – PRODUCT AND COMPANY ID

Product Name: ECOBOND® Pb

Chemical Family: Inorganic Salt

Date of Preparation:

Information Phone Number: (888) 435-6645

Manufacturers' Name:

MT², LLC

14045 West 66th Avenue

Arvada, CO 80004

Emergency Phone Number: (888) 435-6645

Information Phone Number: (888) 435-6645

2 SECTION 2 – PRECAUTIONARY MEASURES

Avoid breathing dust.

Avoid ingestion.

Avoid excessive contact with eyes or skin.

Use in adequate ventilation.

Respiratory protection: Single use dust respirator.

Skin Protection: Protect open wounds.

2.1.1 **Eye protection:** Eye protection should be worn at all times; wash thoroughly after handling.

3 SECTION 3 – emergency and first aid procedures

IF IN EYES: Immediately flush with plenty of water for at least 30 minutes. Seek medical attention.

IF ON SKIN: Wash contaminated area with soap or mild detergent and water. If solution soaks through clothing, remove clothing in area and wash contaminated skin as above. If irritation persists after washing, seek medical attention.

IF INHALED: Move to fresh air. Treat symptomatically. Get medical attention promptly.

IF INGESTED: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

4 SECTION 4 – health hazard data

May cause severe eye burns. Keep container tightly closed. Use ventilation adequate to keep exposures below recommended limits. Do not get in eyes. Wear appropriate eye protection. Wash thoroughly after handling.

OSHA: Total weighted average for dust over an 8-hour period is 15 mg/m³

ACGIH: Total weighted average for dust over an 8-hour period is 10 mg/m³

NFPA Hazard Class

Health: 2 (Minor)

Flammability: 0 (Least)

Instability: Special 0 (Least)

Hazard: None

5 SECTION 5 – physical data

Boiling Point (°F): Decomposes

Melting Point (°F): 288 degrees F

Vapor Pressure (mmHg): Not applicable

Specific Gravity (H₂O=1): 2.22

% Volatile by Volume: Not applicable

Vapor Density: Not applicable

Solubility in Water: (20°C): 85.0%

Evaporation Rate (Butyl Acetate = 1): Not applicable

Physical State: Solid

Density: Bulk (Packed), 68-72 Lbs./Ft³

pH: (1% Sol), 2.5 to 3.0

Appearance And Odor: Black to Green, Granulated

Solid Material. Slight Odor.



MT², LLC
14045 West 66th Avenue • Arvada, CO 80004
(888) 435-6645

G - 1



6 SECTION 6 – reactivity

Stability: Stable

Hazardous Polymerization: Will not occur

Conditions And Materials To Avoid: Extreme temperatures.

Hazardous Decomposition Products. Extreme temperatures such as a fire cause formation of toxic fumes of PO_x.

7 SECTION 7 – fire and explosion hazards

Flash Point: Not applicable.

Flammable Limits: Not applicable.

Extinguishing Media: Small Fire – Water spray, foam, dry chemical, or CO₂. Large Fire – Water spray, fog, or foam.

Special Fire Fighting Procedures: Use self-contained breathing apparatus. Wear full protective clothing.

Unusual Fire and Explosion Hazards: Toxic PO_x fumes are formed in a fire.

8 Section 8 – Spill/leak

Storage: When possible store this material in cool, dry, well-ventilated areas to protect product quality. Keep container(s) tightly closed. Store only in approved containers, if applicable. Protect container(s) against physical damage.

Emergency Action: Avoid breathing dust. Wear respiratory equipment.

Small Spills: Carefully shovel material into clean, dry container. Remove from site.

Large Spills: Use same procedure as above. Contact proper local, state or Federal regulatory agency to ascertain proper disposal technique and procedure.

9 section 9 – other Information

Transport: Not listed in the hazardous materials shipping regulations (49 CFR, Table 172.101) by the U.S. Department of Transportation or in the Transport of Dangerous Goods (TDG) Regulations, Canada.

9.1.1 Regulatory Information

CERCLA: No

RCRA 261.33: No

9.1.2 **TSCA:** 8(b) Chemical Inventory: Yes TSCA 8(d): No

9.1.3 **Proposition 65** (CA Health & Safety Code Section 25249.5): Warning: This product contains substances known to the State of California to cause cancer and birth defects or other reproductive harm.

9.1.4 **NTP, IARC, OSHA:** This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

References: Sax and Lewis, Dangerous Properties of Industrial Materials, seventh edition, Van Nostrand Reinhold Co., N.Y., 1989.

10 Disclaimer

The information in this document is believed to be correct as of the date of issue. **However, no warranty of merchantability, fitness for any particular purpose or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this information or the product, the safety of this product or the hazards related to its use.** This information and product are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use thereof. Metals Treatment Technologies, LLC (MT², LLC) specifically **disclaims any liability whatsoever for the use of such information**, including without limitation any recommendations which user may construe and attempt to apply which may infringe or violate patents, licenses and/or copyright.

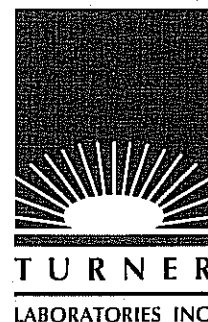


MT², LLC
14045 West 66th Avenue • Arvada, CO 80004
(888) 435-6645
G - 2



APPENDIX C

Analytical Laboratory Reports



April 18, 2008

Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: Silverbell Firing Range

Order No.: 0803742

Dear Keith Fritz,

Turner Laboratories, Inc. received 15 samples on 3/24/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

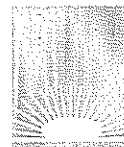
The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director



CLIENT: Brown & Caldwell
Project: Silverbell Firing Range
Lab Order: 0803742

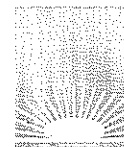
CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0803742-01 through -15: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Analytical Comments for METHOD ICP_RS, SAMPLE 0803742-01AMS/MSD: The recoveries is outside of acceptance limits due to matrix interferences. The recovery is acceptable in the LCS/LCSD.

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-01A

Client Sample ID: COT-BSB-NS-E
Collection Date: 3/24/2008 11:10:00 AM

Matrix: SOIL

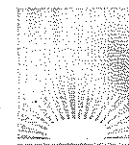
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	53	10		mg/Kg	1	3/28/2008 2:03:03 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-02A

Client Sample ID: COT-BSB-NS-EC
Collection Date: 3/24/2008 11:20:00 AM

Matrix: SOIL

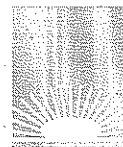
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	3/28/2008 2:51:23 PM
Arsenic	4.0	5.0	J	mg/Kg	1	3/28/2008 2:51:23 PM
Copper	29	5.0		mg/Kg	1	3/28/2008 2:51:23 PM
Lead	49	10		mg/Kg	1	3/28/2008 2:51:23 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



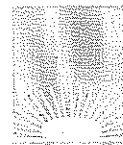
CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-03A

Client Sample ID: COT-BSB-NS-C
Collection Date: 3/24/2008 11:30:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	350	10		mg/Kg	1	3/28/2008 2:56:44 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



Turner Laboratories, Inc.

Date: 18-Apr-08

CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-04A

Client Sample ID: COT-BSB-NS-WC
Collection Date: 3/24/2008 11:40:00 AM
Matrix: SOIL

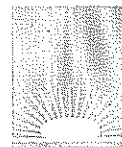
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	3/28/2008 3:02:30 PM
Arsenic	5.0	5.0	J	mg/Kg	1	3/28/2008 3:02:30 PM
Copper	36	5.0		mg/Kg	1	3/28/2008 3:02:30 PM
Lead	66	10		mg/Kg	1	3/28/2008 3:02:30 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-05A

Client Sample ID: COT-BSB-NS-W
Collection Date: 3/24/2008 11:50:00 AM
Matrix: SOIL

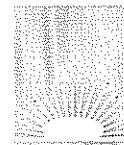
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	15,000	1,000		mg/Kg	100	3/28/2008 3:34:45 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-06A

Client Sample ID: COT-BPB-E
Collection Date: 3/24/2008 2:00:00 PM
Matrix: SOIL

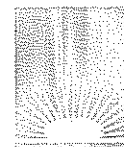
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	6,700	1,000		mg/Kg	100	3/28/2008 3:57:54 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-07A

Client Sample ID: COT-BPB-EC
Collection Date: 3/24/2008 2:10:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	160	10		mg/Kg	1	3/31/2008 1:35:54 PM
Arsenic	14	5.0		mg/Kg	1	3/31/2008 1:35:54 PM
Copper	19,000	500		mg/Kg	100	3/28/2008 4:02:14 PM
Lead	23,000	1,000		mg/Kg	100	3/28/2008 4:02:14 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-08A

Client Sample ID: COT-BPB-C
Collection Date: 3/24/2008 2:20:00 PM

Matrix: SOIL

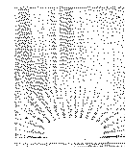
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	46	10		mg/Kg	1	3/28/2008 4:28:20 PM
Arsenic	12	5.0		mg/Kg	1	3/28/2008 4:28:20 PM
Copper	390	5.0		mg/Kg	1	3/28/2008 4:28:20 PM
Lead	6,200	1,000		mg/Kg	100	3/31/2008 12:38:46 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-09A

Client Sample ID: COT-BPB-WC
Collection Date: 3/24/2008 2:25:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	29,000	1,000		mg/Kg	100	3/31/2008 12:43:05 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-10A

Client Sample ID: COT-BPB-W
Collection Date: 3/24/2008 2:30:00 PM

Matrix: SOIL

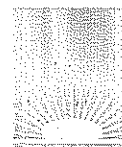
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	2,700	100		mg/Kg	10	3/31/2008 12:47:25 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-11A

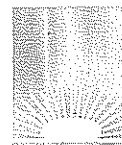
Client Sample ID: COT-B-DUP01
Collection Date: 3/24/2008 2:35:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	320	10		mg/Kg	1	3/28/2008 4:41:28 PM
Arsenic	24	5.0		mg/Kg	1	3/28/2008 4:41:28 PM
Copper	710	5.0		mg/Kg	1	3/28/2008 4:41:28 PM
Lead	32,000	1,000		mg/Kg	100	3/31/2008 12:52:21 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



Turner Laboratories, Inc.

Date: 18-Apr-08

CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-12A

Client Sample ID: COT-BRF-NW
Collection Date: 3/24/2008 2:50:00 PM

Matrix: SOIL

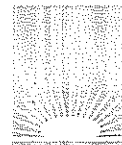
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	9.0	10	J	mg/Kg	1	3/28/2008 4:45:35 PM
Arsenic	7.6	5.0		mg/Kg	1	3/28/2008 4:45:35 PM
Copper	89	5.0		mg/Kg	1	3/28/2008 4:45:35 PM
Lead	1,100	100		mg/Kg	10	3/31/2008 12:56:41 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-13A

Client Sample ID: COT-BRF-SW
Collection Date: 3/24/2008 3:00:00 PM
Matrix: SOIL

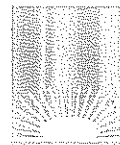
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	560	100		mg/Kg	10	3/31/2008 1:01:26 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 18-Apr-08



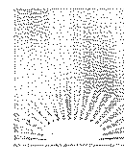
CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-14A

Client Sample ID: COT-BRF-SE
Collection Date: 3/24/2008 3:10:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	34,000	1,000		mg/Kg	100	3/31/2008 1:06:12 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



Turner Laboratories, Inc.

Date: 18-Apr-08

CLIENT: Brown & Caldwell
Lab Order: 0803742
Project: Silverbell Firing Range
Lab ID: 0803742-15A

Client Sample ID: COT-BRF-NE
Collection Date: 3/24/2008 3:20:00 PM
Matrix: SOIL

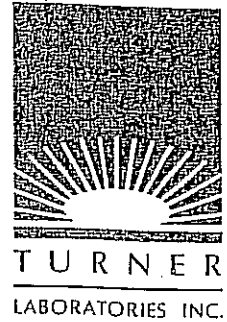
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	730	10		mg/Kg	1	3/28/2008 5:00:07 PM
Arsenic	72	5.0		mg/Kg	1	3/28/2008 5:00:07 PM
Copper	110	5.0		mg/Kg	1	3/28/2008 5:00:07 PM
Lead	25,000	1,000		mg/Kg	100	3/31/2008 1:10:33 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0803742

Received By: DW

Received Date/Time: 3/24/08 15:38

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? +0²⁰ / 14^{0C}
13. Number of sample containers received? 15

Additional Comments:

PROJECT NAME: SILVER BELL FILING RANGE#				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																													
CONTACT NAME: KEITH FRITZ																																	
COMPANY NAME: BROWN & Caldwell																																	
ADDRESS: 110 S. Church Ave Ste 2300																																	
Tucson 85701 PHONE: 624-5744 FAX:																																	
SAMPLER'S SIGNATURE: Michelle Mahal																																	
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	Acids	Base Neutrals	625/8270	Volatile Organics	624/524.2/8260	THMS	HAMS	PCBs	8082	Total Petroleum Hydrocarbons	IR(8015A2)	Oil and Grease	Cray, 1664A	VOA	TCP Analysis	Semi-VOA	Pest/Herb.	Metals	Total %	Cyanide	Amen.	WAD	SECONDARY	Coliform	q, q	TSS	BOD	Total / Sb, As, Cu	
COT-BSB-NS-E	3/24/08	1110		S																													
COT-BSB-NS-EC		1120																															
COT-BSB-NS-C		1130																															
COT-BSB-NS-WC		1140																															
COT-BSB-NS-W		1150																															
COT-BPB-E		1400																															
COT-BPB-EC		1410																															
COT-BPB-C		1420																															
COT-BPB-WC		1425																															
COT-BPB-W		1430																															

1. RELINQUISHED BY:	2. RECEIVED BY:	TURNAROUND REQUIREMENTS:	REPORT REQUIREMENTS:	INVOICE INFORMATION:	SAMPLE RECEIPT:
Signature: <u>Michele Mahal</u> Printed Name: <u>Michele Mahal</u> Firm: <u>BC</u> Date/Time: <u>3/24/08 1545</u>	Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	Standard (approx. 10 days)* Next Day _____ 2 Day _____ 5 Day* Fax Preliminary Results Requested Report Date _____ Working Days	I. Routine Report II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to Invoice	Account _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>10</u> Temperature <u>14</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice	

3. RELINQUISHED BY:	4. RECEIVED BY:
Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	Signature: <u>Namway</u> Printed Name: <u>Namway</u> Firm: <u>TURNER LABORATORIES, INC.</u> Date/Time: <u>3/24/08 15:38</u>

* LEGEND	
ST = STORMWATER	Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No
SL = SOIL	ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No
SD = SOLID	Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No
SC = SLUDGE	
WW = WASTEWATER	
GW = GROUNDWATER	
DW = DRINKING WATER	

[illegible]



April 24, 2008

Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell

Order No.: 0804638

Dear Keith Fritz,

Turner Laboratories, Inc. received 8 samples on 4/16/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

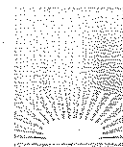
The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

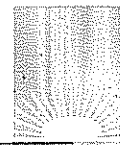
Shari Bauman
Laboratory Director



CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804638
Date Received: 4/16/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804638-01A	COT-SB-01		4/16/2008 3:30:00 PM
0804638-02A	COT-SB-02		4/16/2008 3:37:00 PM
0804638-03A	COT-SB-03		4/16/2008 3:45:00 PM
0804638-04A	COT-SB-04		4/1/2008 3:50:00 PM
0804638-05A	COT-SB-05		4/16/2008 4:00:00 PM
0804638-06A	COT-SB-06		4/16/2008 4:05:00 PM
0804638-07A	COT-SB-07		4/16/2008 4:10:00 PM
0804638-08A	COT-SB-08		4/16/2008 4:15:00 PM



CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804638

CASE NARRATIVE

Analytical Comments for METHOD ICP, SAMPLE 0804638-01 through -08: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-01A

Client Sample ID: COT-SB-01
Collection Date: 4/16/2008 3:30:00 PM

Matrix: SOIL

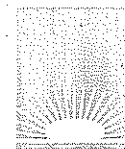
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	41	10		mg/Kg	1	4/18/2008 8:21:43 PM

Qualifiers:
ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-SB-02

Lab Order: 0804638

Collection Date: 4/16/2008 3:37:00 PM

Project: COT-Silverbell

Lab ID: 0804638-02A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	4/18/2008 8:57:21 PM
Arsenic	5.0	5.0	J	mg/Kg	1	4/18/2008 8:57:21 PM
Copper	26	5.0		mg/Kg	1	4/18/2008 8:57:21 PM
Lead	21	10		mg/Kg	1	4/18/2008 8:57:21 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

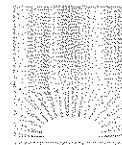
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-03A

Client Sample ID: COT-SB-03
Collection Date: 4/16/2008 3:45:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	46	10		mg/Kg	1	4/18/2008 9:02:42 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

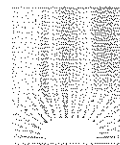
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-04A

Client Sample ID: COT-SB-04
Collection Date: 4/1/2008 3:50:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	20		10	mg/Kg	1	4/18/2008 9:08:02 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

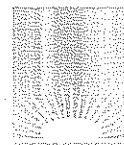
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-05A

Client Sample ID: COT-SB-05
Collection Date: 4/16/2008 4:00:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	150	10		mg/Kg	1	4/18/2008 9:13:23 PM
Arsenic	5.8	5.0		mg/Kg	1	4/18/2008 9:13:23 PM
Copper	130	5.0		mg/Kg	1	4/18/2008 9:13:23 PM
Lead	7,800	10		mg/Kg	1	4/18/2008 9:13:23 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

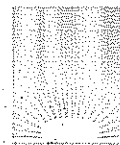
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-06A

Client Sample ID: COT-SB-06
Collection Date: 4/16/2008 4:05:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	41	10		mg/Kg	1	4/18/2008 8:41:55 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-07A

Client Sample ID: COT-SB-07
Collection Date: 4/16/2008 4:10:00 PM

Matrix: SOIL

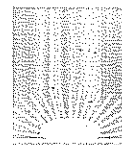
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	4/18/2008 9:18:03 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/18/2008 9:18:03 PM
Copper	33	5.0		mg/Kg	1	4/18/2008 9:18:03 PM
Lead	26	10		mg/Kg	1	4/18/2008 9:18:03 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804638
Project: COT-Silverbell
Lab ID: 0804638-08A

Client Sample ID: COT-SB-08
Collection Date: 4/16/2008 4:15:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	23	10		mg/Kg	1	4/18/2008 9:23:38 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

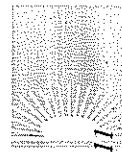
R - RPD outside accepted recovery limits

E - Value above quantitation range

Lab Order: 0804638
Client: Brown & Caldwell
Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCCLP Date	Prep Date	Analysis Date
0804638-01A	COT-SB-01	4/16/2008 3:30:00 PM	Soil	ICP Metals-RCRA, Total		4/17/2008	4/18/2008 8:21:43 PM
0804638-02A	COT-SB-02	4/16/2008 3:37:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 8:57:21 PM
0804638-03A	COT-SB-03	4/16/2008 3:45:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 9:02:42 PM
0804638-04A	COT-SB-04	4/1/2008 3:50:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 9:08:02 PM
0804638-05A	COT-SB-05	4/16/2008 4:00:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 9:13:23 PM
0804638-06A	COT-SB-06	4/16/2008 4:05:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 8:41:55 PM
0804638-07A	COT-SB-07	4/16/2008 4:10:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 9:18:03 PM
0804638-08A	COT-SB-08	4/16/2008 4:15:00 PM		ICP Metals-RCRA, Total		4/17/2008	4/18/2008 9:23:38 PM



TURNER LABORATORIES, INC.



QC Report

Level II

Turner Laboratories WO #: 0804638

Client: Brown and Caldwell

Project Name: COT-Silverbell

Turner Laboratories, Inc.

Date: 24-Apr-08

CLIENT: Brown & Caldwell
Work Order: 0804638
Project: COT-Silverbell

QC SUMMARY REPORT

Method Blank

Sample ID	MB-10583	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/18/2008 7:29:27 PM	Prep Date	4/17/2008			
Client ID:			Run ID: ICP_080418A		SeqNo:	619987					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND										
Arsenic	ND										
Copper	ND										
Lead	ND										

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

CLIENT: Brown & Caldwell
Work Order: 0804638
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID	0804638-01AMS	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/18/2008 8:27:19 PM	Prep Date	4/17/2008			
Client ID:	COT-SB-01		Run ID: ICP_080418A		SeqNo:	619994					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	19.4	10	50	0.8234	37.2	75	125	0			S
Arsenic	51.01	5	50	4.403	93.2	75	125	0			
Copper	82.9	5	50	34.1	97.6	75	125	0			
Lead	78.51	10	50	40.57	75.9	75	125	0			

Sample ID	0804638-01AMSD	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/18/2008 8:32:27 PM	Prep Date	4/17/2008			
Client ID:	COT-SB-01		Run ID: ICP_080418A		SeqNo:	619995					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.43	10	50	0.8234	33.2	75	125	19.4	10.7	20	S
Arsenic	52.61	5	50	4.403	96.4	75	125	51.01	3.09	20	
Copper	81.53	5	50	34.1	94.9	75	125	82.9	1.66	20	
Lead	58.98	10	50	40.57	36.8	75	125	78.51	28.4	20	SR

Sample ID	0804638-06AMS	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/18/2008 8:47:22 PM	Prep Date	4/17/2008			
Client ID:	COT-SB-06		Run ID: ICP_080418A		SeqNo:	619997					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.58	10	50	0.7016	35.8	75	125	0			S
Arsenic	48.06	5	50	3.79	88.5	75	125	0			
Copper	74.73	5	50	27.94	93.6	75	125	0			
Lead	83.99	10	50	41.04	85.9	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804638
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID	0804638-06AMSD	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/18/2008 8:52:22 PM	Prep Date	4/17/2008			
Client ID:	COT-SB-06		Run ID: ICP_080418A		SeqNo:	619998					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	134.8	10	50	0.7016	268	75	125	18.58	152	20	SR
Arsenic	49.38	5	50	3.79	91.2	75	125	48.06	2.7	20	
Copper	78.14	5	50	27.94	100	75	125	74.73	4.46	20	
Lead	6022	10	50	41.04	12000	75	125	83.99	194	20	SR

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 24-Apr-08

CLIENT: Brown & Caldwell

Work Order: 0804638

Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10583	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/18/2008 7:33:44 PM	Prep Date 4/17/2008					
Client ID:		Run ID: ICP_080418A			SeqNo: 619988						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	94.8	20	100	0	94.8	80	120	0			
Arsenic	103.4	10	100	0	103	80	120	0			
Copper	110.4	10	100	0	110	80	120	0			
Lead	106.3	20	100	0	106	80	120	0			

Sample ID	LCSD-10583	Batch ID: 10583	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/18/2008 7:38:19 PM	Prep Date 4/17/2008					
Client ID:		Run ID: ICP_080418A			SeqNo: 619989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	94.72	20	100	0	94.7	80	120	94.8	0.0765	20	
Arsenic	102.9	10	100	0	103	80	120	103.4	0.438	20	
Copper	110.5	10	100	0	111	80	120	110.4	0.0784	20	
Lead	106	20	100	0	106	80	120	106.3	0.315	20	

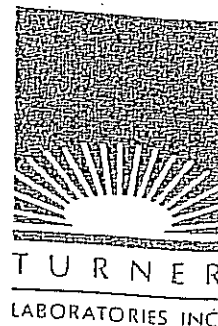
Qualifiers: NID - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804638

Received By: DW

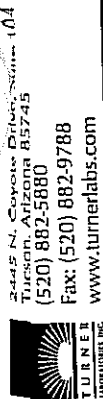
Received Date/Time: 4/16/08 10:15

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 8
13. Number of sample containers received? 8

Additional Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM



2445 N. Cowan Drive
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 0804638 DATE 4/16/08 PAGE 1 OF 1

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

PROJECT NAME COT-SILVERBELL #
 CONTACT NAME KEITH FRITZ
 COMPANY NAME BROWN & CALDWELL
 ADDRESS 110 S Church Ave Ste 2300 Tucson
AZ 85701 PHONE 624-5744 FAX
 SAMPLER'S SIGNATURE MK Mahal

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*
COT-SB-01	4/16/08	1530		S
COT-SB-02		1537		
COT-SB-03		1545		
COT-SB-04		1550		
COT-SB-05		1606		
COT-SB-06		1605		
COT-SB-07		1610		
COT-SB-08		1615		

Acids	<input type="checkbox"/>	Base Neutrals	<input type="checkbox"/>	625/8270	<input type="checkbox"/>	Volatile Organics	<input type="checkbox"/>	624/524.2/8260	<input type="checkbox"/>	THMS	<input type="checkbox"/>	HAA5	<input type="checkbox"/>	PCBs	<input type="checkbox"/>	8082	<input type="checkbox"/>	Total Petroleum Hydrocarbons	<input type="checkbox"/>	1664A	<input type="checkbox"/>	Oil and Grease	<input type="checkbox"/>	Grav. 1664A	<input type="checkbox"/>	VOA	<input type="checkbox"/>	TCLP Analysis	<input type="checkbox"/>	Pest./Herb.	<input type="checkbox"/>	Metals	<input type="checkbox"/>	Total	<input type="checkbox"/>	Priority Pollutants	<input type="checkbox"/>	Cyanide	<input type="checkbox"/>	WAD	<input type="checkbox"/>	SDVA-INORGANICS	<input type="checkbox"/>	PRIMARY	<input type="checkbox"/>	SECONDARY	<input type="checkbox"/>	Coliform	<input type="checkbox"/>	q ₁	<input type="checkbox"/>	COD	<input type="checkbox"/>	TSS	<input type="checkbox"/>	BOD	<input type="checkbox"/>	TOTAL Pb	<input type="checkbox"/>	TOTAL Hg, Sb, Cu, Cd, Ni	<input type="checkbox"/>
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1. RELINQUISHED BY: MK Mahal Signature MK Mahal Printed Name MK Mahal Date/Time 4/16/08 1605

2. RECEIVED BY: Keith Fritz Signature Keith Fritz Printed Name Keith Fritz Date/Time 4/16/08 1615

3. RELINQUISHED BY: Keith Fritz Signature Keith Fritz Printed Name Keith Fritz Date/Time 4/16/08 1700

4. RECEIVED BY: Turner Laboratories, Inc. Signature Printed Name Date/Time 4/16/08 1615

TURNAROUND REQUIREMENTS: Standard (approx. 10 days)* Next Day 2 Day 5 Day*

* LEGEND
 ST = STORMWATER
 SL = SOIL
 SD = SOLID
 SG = SLUDGE
 WW = WASTEWATER
 GW = GROUNDWATER
 DW = DRINKING WATER

REPORT REQUIREMENTS:
 I. Routine Report
 II. Report (includes DUP, MS, MSD, as required, may be changed as samples)
 III. Date Validation Report (includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:
 Account Y N
 P.O. #
 Bill to:
 Total Containers 8
 Temperature 8
☒ Wet Ice ☐ Blue Ice

SAMPLE RECEIPT:

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No
 ADEQ Forms: ☐ Yes ☐ No
 Mail ADEQ Forms: ☐ Yes ☐ No

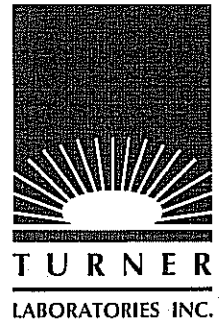
791-2738
 fax or email
 kfritz@brunecald.com

DISTRIBUTION: WHITE - return to originator

PINK - retained by originator

See back of pink copy for general terms and conditions/limits of liability.

April 24, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell

Order No.: 0804681

Dear Keith Fritz,

Turner Laboratories, Inc. received 9 samples on 4/17/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

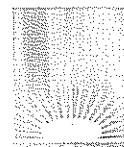
The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

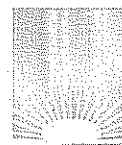
Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

**CLIENT:** Brown & Caldwell**Project:** COT-Silverbell**Lab Order:** 0804681**Date Received:** 4/17/2008**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804681-01A	COT-PB-01		4/17/2008 2:25:00 PM
0804681-02A	COT-PB-02		4/17/2008 2:40:00 PM
0804681-03A	COT-PB-03		4/17/2008 2:45:00 PM
0804681-04A	COT-PB-04		4/17/2008 2:50:00 PM
0804681-05A	COT-PB-05		4/17/2008 3:00:00 PM
0804681-06A	COT-PB-06		4/17/2008 3:05:00 PM
0804681-07A	COT-PB-07		4/17/2008 3:10:00 PM
0804681-08A	COT-PB-08		4/17/2008 3:15:00 PM
0804681-09A	COT-Dup 02		4/17/2008 2:00:00 PM



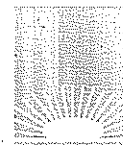
CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804681

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0804681-01 through -09: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804681
Project: COT-Silverbell
Lab ID: 0804681-01A

Client Sample ID: COT-PB-01
Collection Date: 4/17/2008 2:25:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	15	10		mg/Kg	1	4/20/2008 3:07:55 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

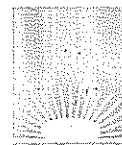
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804681
Project: COT-Silverbell
Lab ID: 0804681-02A

Client Sample ID: COT-PB-02
Collection Date: 4/17/2008 2:40:00 PM

Matrix: SOIL

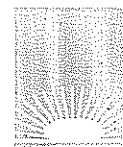
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	4/22/2008 10:34:26 AM
Arsenic	7.1	5.0		mg/Kg	1	4/22/2008 10:34:26 AM
Copper	39	5.0		mg/Kg	1	4/20/2008 4:18:07 PM
Lead	1,500	10		mg/Kg	1	4/20/2008 4:18:07 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804681
Project: COT-Silverbell
Lab ID: 0804681-03A

Client Sample ID: COT-PB-03
Collection Date: 4/17/2008 2:45:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	1,700	10		mg/Kg	1	4/20/2008 4:23:11 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

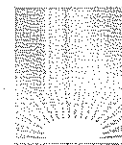
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08

**CLIENT:** Brown & Caldwell**Client Sample ID:** COT-PB-04**Lab Order:** 0804681**Collection Date:** 4/17/2008 2:50:00 PM**Project:** COT-Silverbell**Lab ID:** 0804681-04A**Matrix:** SOIL

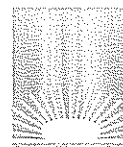
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	4/22/2008 10:38:34 AM
Arsenic	5.8	5.0		mg/Kg	1	4/22/2008 10:38:34 AM
Copper	11	5.0		mg/Kg	1	4/20/2008 4:28:12 PM
Lead	11	10		mg/Kg	1	4/20/2008 4:28:12 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-PB-05

Lab Order: 0804681

Collection Date: 4/17/2008 3:00:00 PM

Project: COT-Silverbell

Lab ID: 0804681-05A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	9.0	10	J	mg/Kg	1	4/20/2008 4:33:05 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

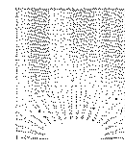
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804681
Project: COT-Silverbell
Lab ID: 0804681-06A

Client Sample ID: COT-PB-06
Collection Date: 4/17/2008 3:05:00 PM
Matrix: SOIL

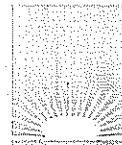
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	43	10		mg/Kg	1	4/22/2008 10:43:31 AM
Arsenic	8.1	5.0		mg/Kg	1	4/22/2008 10:43:31 AM
Copper	180	5.0		mg/Kg	1	4/20/2008 4:37:57 PM
Lead	6,100	200		mg/Kg	20	4/21/2008 3:36:44 PM
Lead	5,000	10		mg/Kg	1	4/20/2008 4:37:57 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell
Lab Order: 0804681
Project: COT-Silverbell
Lab ID: 0804681-07A

Client Sample ID: COT-PB-07
Collection Date: 4/17/2008 3:10:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	10	10		mg/Kg	1	4/20/2008 4:42:52 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

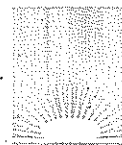
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-PB-08

Lab Order: 0804681

Collection Date: 4/17/2008 3:15:00 PM

Project: COT-Silverbell

Lab ID: 0804681-08A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	15	10		mg/Kg	1	4/20/2008 4:47:45 PM

Qualifiers:

ND - Not Detected at or above the PQL

PQL - Practical Quantitation Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

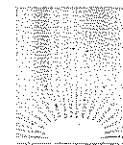
R - RPD outside accepted recovery limits

* - Value exceeds Maximum Contaminant Level

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 24-Apr-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-Dup 02

Lab Order: 0804681

Collection Date: 4/17/2008 2:00:00 PM

Project: COT-Silverbell

Lab ID: 0804681-09A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/22/2008 10:17:29 AM
Arsenic	6.3	5.0		mg/Kg	1	4/22/2008 10:17:29 AM
Copper	12	5.0		mg/Kg	1	4/20/2008 3:25:39 PM
Lead	8.0	10	J	mg/Kg	1	4/20/2008 3:25:39 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

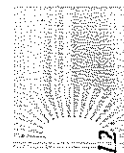
R - RPD outside accepted recovery limits

E - Value above quantitation range

Lab Order: 0804681
 Client: Brown & Caldwell
 Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804681-01A	COT-PB-01	4/17/2008 2:25:00 PM	Soil	ICP Metals-RCRA, Total		4/18/2008	4/20/2008 3:07:55 PM
0804681-02A	COT-PB-02	4/17/2008 2:40:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/22/2008 10:34:26 AM
0804681-03A	COT-PB-03	4/17/2008 2:45:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:18:07 PM
0804681-04A	COT-PB-04	4/17/2008 2:50:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:23:11 PM
0804681-05A	COT-PB-05	4/17/2008 3:00:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/22/2008 10:38:34 AM
0804681-06A	COT-PB-06	4/17/2008 3:05:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:28:12 PM
				ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:33:05 PM
				ICP Metals-RCRA, Total		4/18/2008	4/22/2008 10:43:31 AM
				ICP Metals-RCRA, Total		4/18/2008	4/21/2008 3:36:44 PM
				ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:37:57 PM
0804681-07A	COT-PB-07	4/17/2008 3:10:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:42:52 PM
0804681-08A	COT-PB-08	4/17/2008 3:15:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/20/2008 4:47:45 PM
0804681-09A	COT-Dup 02	4/17/2008 2:00:00 PM		ICP Metals-RCRA, Total		4/18/2008	4/22/2008 10:17:29 AM
				ICP Metals-RCRA, Total		4/18/2008	4/20/2008 3:25:39 PM



TURNER LABORATORIES, INC.



QC Report

Level II

Turner Laboratories WO #: 0804681

Client: Brown and Caldwell

Project Name: COT-Silverbell

Turner Laboratories, Inc.

Date: 24-Apr-08

CLIENT: Brown & Caldwell
Work Order: 0804681
Project: COT-Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID MB-10585 Batch ID: 10585 Test Code: SW6010B Units: mg/Kg Prep Date 4/18/2008
Client ID: Run ID: ICP_080420A SeqNo: 620140
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper ND 10
Lead ND 20

Sample ID MB-10585 Batch ID: 10585 Test Code: SW6010B Units: mg/Kg Prep Date 4/18/2008
Client ID: Run ID: ICP_080421A SeqNo: 620364
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead ND 20

Sample ID MB-10585 Batch ID: 10585 Test Code: SW6010B Units: mg/Kg Prep Date 4/18/2008
Client ID: Run ID: ICP_080422B SeqNo: 620452
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony ND 20
Arsenic ND 10

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Turner Laboratories, Inc.

Date: 24-Apr-08

CLIENT: Brown & Caldwell

Work Order: 0804681

Project: COT-Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0804681-01AMS	Batch ID: 10585	Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/20/2008 3:12:50 PM		Prep Date 4/18/2008		
Client ID:	COT-PB-01		Run ID:	ICP_080420A			SeqNo:	620144			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	67.91	5	50	13.23	109	75	125	0			
Lead	165.9	10	50	15.12	302	75	125	0			S

Sample ID	0804681-01AMSD	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/20/2008 3:17:06 PM	Prep Date	4/18/2008			
Client ID:	COT-PB-01		Run ID: ICP_080420A		SeqNo:	620145					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	62.48	5	50	13.23	98.5	75	125	67.91	8.33	20	
Lead	63.85	10	50	15.12	97.5	75	125	165.9	88.8	20	R

Sample ID	0804681-09AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/20/2008 3:30:36 PM	Prep Date	4/18/2008			
Client ID:	COT-Dup 02		Run ID: ICP_080420A		SeqNo:	620147					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	60.7	5	50	11.78	97.8	75	125	0			
Lead	51.09	10	50	7.883	86.4	75	125	0			

Sample ID	0804681-09AMSD	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/20/2008 3:34:53 PM	Prep Date	4/18/2008			
Client ID:	COT-Dup 02		Run ID: ICP_080420A		SeqNo:	620148					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	62.13	5	50	11.78	101	75	125	60.7	2.33	20	
Lead	52.29	10	50	7.883	88.8	75	125	51.09	2.33	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804681
Project: COT-Silverbell

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID	0804681-09AMS	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/22/2008 10:21:31 AM	Prep Date	4/18/2008				
Client ID:	COT-Dup 02		Run ID: ICP_080422B		SeqNo:	620456						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		20.05	10	50	0.3425	39.4	75	125	0			S
Arsenic		53.22	5	50	6.257	93.9	75	125	0			

Sample ID	0804681-09AMSD	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/22/2008 10:25:51 AM	Prep Date	4/18/2008				
Client ID:	COT-Dup 02		Run ID: ICP_080422B		SeqNo:	620457						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		20.73	10	50	0.3425	40.8	75	125	20.05	3.33	20	S
Arsenic		52.84	5	50	6.257	93.2	75	125	53.22	0.7	20	

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	
			3

Turner Laboratories, Inc.

Date: 24-Apr-08

CLIENT: Brown & Caldwell
 Work Order: 0804681
 Project: COT-Silverball

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/20/2008 2:54:32 PM	Prep Date 4/18/2008
Client ID:			Run ID: ICP_080420A		SeqNo: 620141	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper	105.9	10	100	0	106	80 120 0
Lead	104	20	100	0	104	80 120 0
Sample ID	LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/20/2008 2:59:05 PM	Prep Date 4/18/2008
Client ID:			Run ID: ICP_080420A		SeqNo: 620142	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper	109.2	10	100	0	109	80 120 105.9 3.03 20
Lead	106.9	20	100	0	107	80 120 104 2.78 20
Sample ID	LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/21/2008 2:55:10 PM	Prep Date 4/18/2008
Client ID:			Run ID: ICP_080421A		SeqNo: 620365	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	107	20	100	0	107	80 120 0
Sample ID	LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/21/2008 2:59:41 PM	Prep Date 4/18/2008
Client ID:			Run ID: ICP_080421A		SeqNo: 620366	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	106.3	20	100	0	106	80 120 107 0.681 20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804681
Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/22/2008 10:04:02 AM	Prep Date 4/18/2008					
Client ID:			Run ID: ICP_080422B		SeqNo: 620453						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	108.1	20	100	0	108	80	120	0			
Arsenic	103.6	10	100	0	104	80	120	0			

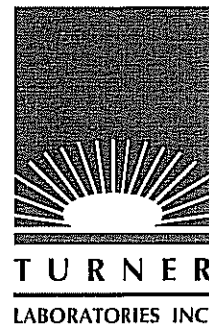
Sample ID	LCSD-10585	Batch ID: 10585	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/22/2008 10:08:38 AM	Prep Date 4/18/2008					
Client ID:			Run ID: ICP_080422B		SeqNo: 620454						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	109.9	20	100	0	110	80	120	108.1	1.6	20	
Arsenic	104.5	10	100	0	105	80	120	103.6	0.849	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

May 05, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell

Order No.: 0804702

Dear Keith Fritz,

Turner Laboratories, Inc. received 1 sample on 4/21/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

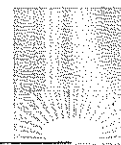
Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066



Shari Bauman
Laboratory Director

CC:



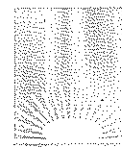
CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804702

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0804702-01A: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804702
Project: COT-Silverbell
Lab ID: 0804702-01A

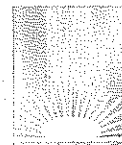
Client Sample ID: COT-PIPE-01
Collection Date: 4/21/2008 7:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	37		10	mg/Kg	1	4/23/2008 3:26:24 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range



TURNER LABORATORIES, INC.

QC SUMMARY

LEVEL II

Turner Laboratories WO #:0804702

Client: Brown & Caldwell

Project Name: COT-Silverbell

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
Work Order: 0804702
Project: COT-Silverbell

QC SUMMARY REPORT

Method Blank

Sample ID	MB-10601	Batch ID	10601	Test Code	SW6010B	Units	mg/Kg	Analysis Date	4/23/2008 1:27:55 PM	Prep Date	4/22/2008
Client ID:		Run ID:	ICP_080423A					SeqNo:	620898		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Lead		ND		20							

Sample ID	MB-10601	Batch ID	10601	Test Code	SW6010B	Units	mg/Kg	Analysis Date	4/24/2008 11:03:13 AM	Prep Date	4/22/2008
Client ID:		Run ID:	ICP_080424A					SeqNo:	621124		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Lead		ND		20							

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
Work Order: 0804702
Project: COT-Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0804735-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:50:58 PM	Prep Date	4/22/2008				
Client ID:			Run ID: ICP_080423A		SeqNo: 620902							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		63.29	10	50	20.13	86.3	75	125	0			

Sample ID	0804735-01AMSD	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:55:51 PM	Prep Date	4/22/2008				
Client ID:			Run ID: ICP_080423A		SeqNo: 620903							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		62.67	10	50	20.13	85.1	75	125	63.29	0.977	20	

Sample ID	0804736-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:09:22 PM	Prep Date	4/22/2008				
Client ID:			Run ID: ICP_080423A		SeqNo: 620905							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		270.8	10	50	475.9	-410	75	125	0			S

Sample ID	0804736-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:14:31 PM	Prep Date	4/22/2008				
Client ID:			Run ID: ICP_080423A		SeqNo: 620906							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		256.4	10	50	475.9	-439	75	125	270.8	5.43	20	S

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
Work Order: 0804702
Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:32:11 PM	Prep Date	4/22/2008			
Client ID:		Run ID:	ICP_080423A		SeqNo:	620899					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	104.5	20	100	0	104	80	120	0			
Sample ID	LCSD-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:36:45 PM	Prep Date	4/22/2008			
Client ID:		Run ID:	ICP_080423A		SeqNo:	620900					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	104	20	100	0	104	80	120	104.5	0.482	20	
Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/24/2008 11:07:32 AM	Prep Date	4/22/2008			
Client ID:		Run ID:	ICP_080424A		SeqNo:	621125					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	105.5	20	100	0	105	80	120	0			
Sample ID	LCSD-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/24/2008 11:12:09 AM	Prep Date	4/22/2008			
Client ID:		Run ID:	ICP_080424A		SeqNo:	621126					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	105.1	20	100	0	105	80	120	105.5	0.366	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804702

Received By: DW

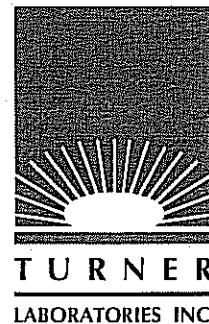
Received Date/Time: 4/21/08 8:05

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 10
13. Number of sample containers received? 1

Additional Comments:

May 05, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell

Order No.: 0804735

Dear Keith Fritz,

Turner Laboratories, Inc. received 10 samples on 4/21/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

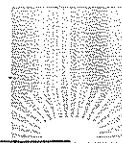
CC:



CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804735
Date Received: 4/21/2008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0804735-01A	COT-BSB-BS-W-06		4/21/2008 9:30:00 AM
0804735-02A	COT-BSB-BS-W-18		4/21/2008 9:40:00 AM
0804735-03A	COT-BSB-BS-W-30		4/21/2008 9:45:00 AM
0804735-04A	COT-BSB-BS-E-06		4/21/2008 10:50:00 AM
0804735-05A	COT-BSB-BS-E-18		4/21/2008 10:55:00 AM
0804735-06A	COT-BSB-BS-E-30		4/21/2008 11:05:00 AM
0804735-07A	COT-BSB-BS-C-06		4/21/2008 11:15:00 AM
0804735-08A	COT-BSB-BS-C-18		4/21/2008 11:20:00 AM
0804735-09A	COT-BSB-BS-C-30		4/21/2008 11:25:00 AM
0804735-10A	COT-DUP03		4/21/2008 12:00:00 PM



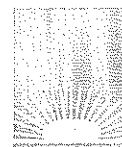
CLIENT: Brown & Caldwell
Project: COT-Silverbell
Lab Order: 0804735

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0804735-01 through -10: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-01A

Client Sample ID: COT-BSB-BS-W-06
Collection Date: 4/21/2008 9:30:00 AM

Matrix: SOIL

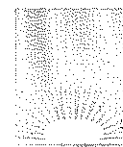
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 1:45:35 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 1:45:35 PM
Copper	29	5.0		mg/Kg	1	4/23/2008 1:45:35 PM
Lead	20	10		mg/Kg	1	4/23/2008 1:45:35 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-02A

Client Sample ID: COT-BSB-BS-W-18
Collection Date: 4/21/2008 9:40:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 2:23:58 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 2:23:58 PM
Copper	33	5.0		mg/Kg	1	4/23/2008 2:23:58 PM
Lead	63	10		mg/Kg	1	4/23/2008 2:23:58 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

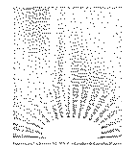
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-03A

Client Sample ID: COT-BSB-BS-W-30
Collection Date: 4/21/2008 9:45:00 AM

Matrix: SOIL

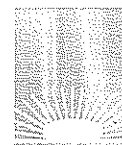
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 2:29:24 PM
Arsenic	3.0	5.0	J	mg/Kg	1	4/23/2008 2:29:24 PM
Copper	21	5.0		mg/Kg	1	4/23/2008 2:29:24 PM
Lead	26	10		mg/Kg	1	4/23/2008 2:29:24 PM

Qualifiers:
ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-04A

Client Sample ID: COT-BSB-BS-E-06
Collection Date: 4/21/2008 10:50:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 2:49:51 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 2:49:51 PM
Copper	28	5.0		mg/Kg	1	4/23/2008 2:49:51 PM
Lead	20	10		mg/Kg	1	4/23/2008 2:49:51 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

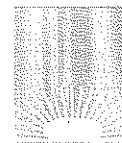
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-05A

Client Sample ID: COT-BSB-BS-E-18
Collection Date: 4/21/2008 10:55:00 AM

Matrix: SOIL

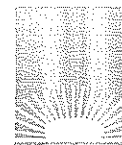
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 2:54:58 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 2:54:58 PM
Copper	31	5.0		mg/Kg	1	4/23/2008 2:54:58 PM
Lead	28	10		mg/Kg	1	4/23/2008 2:54:58 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-06A

Client Sample ID: COT-BSB-BS-E-30
Collection Date: 4/21/2008 11:05:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 3:00:29 PM
Arsenic	5.0	5.0	J	mg/Kg	1	4/23/2008 3:00:29 PM
Copper	24	5.0		mg/Kg	1	4/23/2008 3:00:29 PM
Lead	25	10		mg/Kg	1	4/23/2008 3:00:29 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

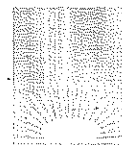
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-07A

Client Sample ID: COT-BSB-BS-C-06
Collection Date: 4/21/2008 11:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 3:05:39 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 3:05:39 PM
Copper	22	5.0		mg/Kg	1	4/23/2008 3:05:39 PM
Lead	24	10		mg/Kg	1	4/23/2008 3:05:39 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-08A

Client Sample ID: COT-BSB-BS-C-18
Collection Date: 4/21/2008 11:20:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 3:11:00 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 3:11:00 PM
Copper	20	5.0		mg/Kg	1	4/23/2008 3:11:00 PM
Lead	23	10		mg/Kg	1	4/23/2008 3:11:00 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-09A

Client Sample ID: COT-BSB-BS-C-30
Collection Date: 4/21/2008 11:25:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 3:16:00 PM
Arsenic	4.0	5.0	J	mg/Kg	1	4/23/2008 3:16:00 PM
Copper	22	5.0		mg/Kg	1	4/23/2008 3:16:00 PM
Lead	23	10		mg/Kg	1	4/23/2008 3:16:00 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804735
Project: COT-Silverbell
Lab ID: 0804735-10A

Client Sample ID: COT-DUP03
Collection Date: 4/21/2008 12:00:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/23/2008 3:21:22 PM
Arsenic	5.3	5.0		mg/Kg	1	4/23/2008 3:21:22 PM
Copper	26	5.0		mg/Kg	1	4/23/2008 3:21:22 PM
Lead	45	10		mg/Kg	1	4/23/2008 3:21:22 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Lab Order: 0804735
 Client: Brown & Caldwell
 Project: COT-Silverbell

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0804735-01A	COT-BSB-BS-W-06	4/21/2008 9:30:00 AM	Soil	ICP Metals-RCRA, Total		4/22/2008	4/23/2008 1:45:35 PM
0804735-02A	COT-BSB-BS-W-18	4/21/2008 9:40:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 2:23:58 PM
0804735-03A	COT-BSB-BS-W-30	4/21/2008 9:45:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 2:29:24 PM
0804735-04A	COT-BSB-BS-E-06	4/21/2008 10:50:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 2:49:51 PM
0804735-05A	COT-BSB-BS-E-18	4/21/2008 10:55:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 2:54:58 PM
0804735-06A	COT-BSB-BS-E-30	4/21/2008 11:05:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 3:00:29 PM
0804735-07A	COT-BSB-BS-C-06	4/21/2008 11:15:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 3:05:39 PM
0804735-08A	COT-BSB-BS-C-18	4/21/2008 11:20:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 3:11:00 PM
0804735-09A	COT-BSB-BS-C-30	4/21/2008 11:25:00 AM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 3:16:00 PM
0804735-10A	COT-DUP03	4/21/2008 12:00:00 PM		ICP Metals-RCRA, Total		4/22/2008	4/23/2008 3:21:22 PM





TURNER LABORATORIES, INC.

QC SUMMARY

LEVEL II

Turner Laboratories WO #:0804735

Client: Brown & Caldwell

Project Name: COT-Silverbell

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell

Work Order: 0804735

Project: COT-Silverbell

QC SUMMARY REPORT

Method Blank

Sample ID	MB-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/23/2008 1:27:55 PM	Prep Date 4/22/2008					
Client ID:			Run ID: ICP_080423A		SeqNo: 620898						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND										
Arsenic	ND										
Copper	ND										
Lead	ND										

Sample ID	MB-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/24/2008 11:03:13 AM	Prep Date 4/22/2008					
Client ID:			Run ID: ICP_080424A		SeqNo: 621124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND										

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
 Work Order: 0804735
 Project: COT-Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0804735-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:50:58 PM	Prep Date	4/22/2008			
Client ID:	COT-BSB-BS-W-0		Run ID: ICP_080423A		SeqNo:	620902					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	18.86	10	50	0	37.7	75	125	0			S
Arsenic	47.22	5	50	4.073	86.3	75	125	0			
Copper	71.37	5	50	29.49	83.7	75	125	0			
Lead	63.29	10	50	20.13	86.3	75	125	0			

Sample ID	0804735-01AMSD	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:55:51 PM	Prep Date	4/22/2008
Client ID:	COT-BSB-BS-W-0		Run ID: ICP_080423A		SeqNo:	620903		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.94	10	50	0	35.9	75	125	18.86	5	20	S
Arsenic	46.82	5	50	4.073	85.5	75	125	47.22	0.858	20	
Copper	74.29	5	50	29.49	89.6	75	125	71.37	4.01	20	
Lead	62.67	10	50	20.13	85.1	75	125	63.29	0.977	20	

Sample ID	0804736-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:09:22 PM	Prep Date	4/22/2008
Client ID:			Run ID: ICP_080423A		SeqNo:	620905		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	270.8	10	50	475.9	-410	75	125	0			S

Sample ID	0804736-01AMSD	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:14:31 PM	Prep Date	4/22/2008
Client ID:			Run ID: ICP_080423A		SeqNo:	620906		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	256.4	10	50	475.9	-439	75	125	270.8	5.43	20	S

Qualifiers:

ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
 Work Order: 0804735
 Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:32:11 PM	Prep Date	4/22/2008			
Client ID:		Run ID: ICP_080423A			SeqNo:	620899					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	101.5	20	100	0	101	80	120	0			
Arsenic	100.8	10	100	0	101	80	120	0			
Copper	106.2	10	100	0	106	80	120	0			
Lead	104.5	20	100	0	104	80	120	0			

Sample ID	LCSD-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:36:45 PM	Prep Date	4/22/2008			
Client ID:		Run ID: ICP_080423A			SeqNo:	620900					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	102.1	20	100	0	102	80	120	101.5	0.595	20	
Arsenic	99.13	10	100	0	99.1	80	120	100.8	1.71	20	
Copper	106.1	10	100	0	106	80	120	106.2	0.082	20	
Lead	104	20	100	0	104	80	120	104.5	0.482	20	

Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/24/2008 11:07:32 AM	Prep Date	4/22/2008			
Client ID:		Run ID: ICP_080424A			SeqNo:	621125					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	105.5	20	100	0	105	80	120	0			
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Sample ID	LCSD-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/24/2008 11:12:09 AM	Prep Date	4/22/2008			
Client ID:		Run ID: ICP_080424A			SeqNo:	621126					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	105.1	20	100	0	105	80	120	105.5	0.366	20	
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
Work Order: 0804736
Project: COT-Silverbell

QC SUMMARY REPORT
Method Blank

Sample ID	MB-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/23/2008 1:27:55 PM	Prep Date 4/22/2008
Client ID:		Run ID: ICP_080423A			SeqNo: 620898	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	ND	20				
Arsenic	ND	10				
Copper	ND	10				
Lead	ND	20				

Sample ID	MB-10602	Batch ID: 10602	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/23/2008 5:08:57 PM	Prep Date 4/22/2008
Client ID:		Run ID: ICP_080423A			SeqNo: 620927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	ND	20				
Arsenic	ND	10				
Copper	ND	10				
Lead	ND	20				

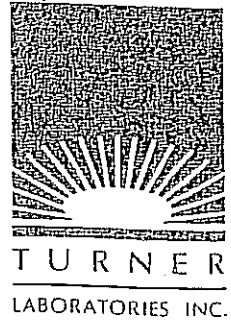
Sample ID	MB-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/24/2008 11:03:13 AM	Prep Date 4/22/2008
Client ID:		Run ID: ICP_080424A			SeqNo: 621124	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	ND	20				

Sample ID	MB-10602	Batch ID: 10602	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/24/2008 11:42:38 AM	Prep Date 4/22/2008
Client ID:		Run ID: ICP_080424A			SeqNo: 621130	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	0.4225	20				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804735

Received By: DW

Received Date/Time: 4/21/08 16:28

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 8
13. Number of sample containers received? 10

Additional Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

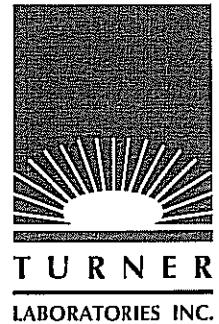
TURNER WORK ORDER # 0804735 DATE 4-21-08 PAGE 1 OF 2

TURNER LABORATORIES, INC.
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

PROJECT NAME <u>COT-SILVERBELL</u> # _____ CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CADWELL</u> ADDRESS <u>110 S. CHURCH AVE., STE 2300</u> <u>Tucson 85701</u> PHONE <u>624-5744</u> FAX _____ SAMPLER'S SIGNATURE <u>MK Mahal</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																					
NUMBER OF CONTAINERS 1		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">Acids</td> <td style="width:10%;">Base Neutrals</td> <td style="width:10%;">Volatile Organics</td> <td style="width:10%;">THMS</td> <td style="width:10%;">HAA5</td> <td style="width:10%;">PCBs</td> <td style="width:10%;">Pesticides</td> <td style="width:10%;">Total Petroleum Hydrocarbons</td> <td style="width:10%;">Oil and Grease</td> <td style="width:10%;">TCP Analysis</td> <td style="width:10%;">Metals</td> <td style="width:10%;">Total</td> <td style="width:10%;">Priority Pollutants</td> <td style="width:10%;">Cyanide</td> <td style="width:10%;">Amen.</td> <td style="width:10%;">WAD</td> <td style="width:10%;">SDWA-INORGANICS</td> <td style="width:10%;">PRIMARY</td> <td style="width:10%;">SECONDARY</td> <td style="width:10%;">Coliform</td> <td style="width:10%;">q₁₀</td> <td style="width:10%;">BOD</td> <td style="width:10%;">COD</td> <td style="width:10%;">TSS</td> <td style="width:10%;">Total Pb</td> <td style="width:10%;">Total As, Sb, Cu</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>				Acids	Base Neutrals	Volatile Organics	THMS	HAA5	PCBs	Pesticides	Total Petroleum Hydrocarbons	Oil and Grease	TCP Analysis	Metals	Total	Priority Pollutants	Cyanide	Amen.	WAD	SDWA-INORGANICS	PRIMARY	SECONDARY	Coliform	q ₁₀	BOD	COD	TSS	Total Pb	Total As, Sb, Cu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acids	Base Neutrals	Volatile Organics	THMS	HAA5	PCBs	Pesticides	Total Petroleum Hydrocarbons	Oil and Grease	TCP Analysis	Metals	Total	Priority Pollutants	Cyanide	Amen.	WAD	SDWA-INORGANICS	PRIMARY	SECONDARY	Coliform	q ₁₀	BOD	COD	TSS	Total Pb	Total As, Sb, Cu																																
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
1. RELINQUISHED BY: <u>MK Mahal</u> Signature <u>MK Mahal</u> Printed Name <u>MK Mahal</u> Date/Time <u>4/21/08 10:25</u>		2. RECEIVED BY: _____ Signature _____ Printed Name _____ Date/Time _____		TURNAROUND REQUIREMENTS: Standard (approx. 10 days)* <input checked="" type="checkbox"/> Next Day 2 Day 5 Day * Working Days		REPORT REQUIREMENTS: I. Routine Report Report (includes DUP, MS, MSD, as required, may be charged as samples) <input checked="" type="checkbox"/> II. Date Validation Report (includes All Raw Data) Add 10% to invoice		INVOICE INFORMATION: Account _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>10</u> Temperature <u>8</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice		SAMPLE RECEIPT: _____ _____ _____																																															
3. RELINQUISHED BY: _____ Signature _____ Printed Name _____ Date/Time _____		4. RECEIVED BY: <u>Nam Wan</u> Signature <u>Nam Wan</u> Printed Name <u>Nam Wan</u> Date/Time <u>4/21/08 10:25</u>		SPECIAL INSTRUCTIONS/COMMENTS: * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER				COMPLIANCE ANALYSIS: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No MAIL ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No																																																	

DISTRIBUTION: WHITE - return to originator PINK - retained by originator See back of pink copy for general terms and conditions/limits of liability.

May 05, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell

Order No.: 0804736

Dear Keith Fritz,

Turner Laboratories, Inc. received 13 samples on 4/21/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

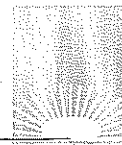
Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066



Shari Bauman
Laboratory Director

CC:



CLIENT: Brown & Caldwell

Project: COT-Silverbell

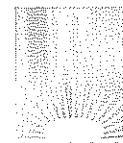
Lab Order: 0804736

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0804736-01 through 13: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-01A

Client Sample ID: COT-RF-01
Collection Date: 4/21/2008 1:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	480	10		mg/Kg	1	4/23/2008 2:04:32 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

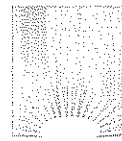
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-02A

Client Sample ID: COT-RF-02
Collection Date: 4/21/2008 1:35:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	84	10		mg/Kg	1	4/23/2008 3:43:38 PM

Qualifiers:
ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-03A

Client Sample ID: COT-RF-03
Collection Date: 4/21/2008 1:40:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	190	10		mg/Kg	1	4/23/2008 3:48:28 PM
Arsenic	14	5.0		mg/Kg	1	4/23/2008 3:48:28 PM
Copper	110	5.0		mg/Kg	1	4/23/2008 3:48:28 PM
Lead	11,000	1,000		mg/Kg	100	4/23/2008 4:09:40 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

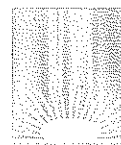
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-04A

Client Sample ID: COT-RF-04
Collection Date: 4/21/2008 1:45:00 PM
Matrix: SOIL

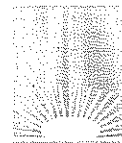
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	590	10		mg/Kg	1	4/23/2008 4:18:48 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-05A

Client Sample ID: COT-RF-05
Collection Date: 4/21/2008 1:50:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	430	10		mg/Kg	1	4/23/2008 4:22:59 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

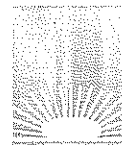
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-06A

Client Sample ID: COT-RF-06
Collection Date: 4/21/2008 1:55:00 PM

Matrix: SOIL

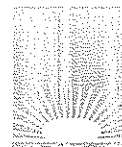
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	80	10		mg/Kg	1	4/23/2008 4:28:01 PM
Arsenic	57	5.0		mg/Kg	1	4/23/2008 4:28:01 PM
Copper	120	5.0		mg/Kg	1	4/23/2008 4:28:01 PM
Lead	6,500	1,000		mg/Kg	100	4/24/2008 11:21:05 AM

Qualifiers:
ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-07A

Client Sample ID: COT-RF-07
Collection Date: 4/21/2008 2:00:00 PM
Matrix: SOIL

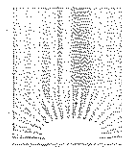
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	500	10		mg/Kg	1	4/23/2008 4:32:50 PM
Arsenic	130	5.0		mg/Kg	1	4/23/2008 4:32:50 PM
Copper	260	5.0		mg/Kg	1	4/23/2008 4:32:50 PM
Lead	29,000	1,000		mg/Kg	100	4/24/2008 11:25:28 AM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-RF-08

Lab Order: 0804736

Collection Date: 4/21/2008 2:10:00 PM

Project: COT-Silverbell

Lab ID: 0804736-08A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	250	10		mg/Kg	1	4/24/2008 11:30:02 AM
Lead	260	10		mg/Kg	1	4/23/2008 4:37:40 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

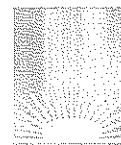
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08

**CLIENT:** Brown & Caldwell**Client Sample ID:** COT-RF-09**Lab Order:** 0804736**Collection Date:** 4/21/2008 2:15:00 PM**Project:** COT-Silverbell**Lab ID:** 0804736-09A**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	120	10		mg/Kg	1	4/23/2008 4:42:30 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

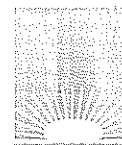
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08

**CLIENT:** Brown & Caldwell**Client Sample ID:** COT-RF-10**Lab Order:** 0804736**Collection Date:** 4/21/2008 2:20:00 PM**Project:** COT-Silverbell**Lab ID:** 0804736-10A**Matrix:** SOIL

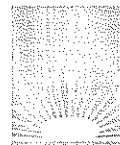
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	4/23/2008 5:26:51 PM
Arsenic	5.0	5.0		mg/Kg	1	4/23/2008 5:26:51 PM
Copper	110	5.0		mg/Kg	1	4/23/2008 5:26:51 PM
Lead	160	10		mg/Kg	1	4/23/2008 5:26:51 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-11A

Client Sample ID: COT-RF-11
Collection Date: 4/21/2008 2:30:00 PM
Matrix: SOIL

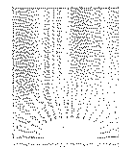
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	200	10		mg/Kg	1	4/23/2008 5:46:02 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804736
Project: COT-Silverbell
Lab ID: 0804736-12A

Client Sample ID: COT-RF-12
Collection Date: 4/21/2008 2:35:00 PM

Matrix: SOIL

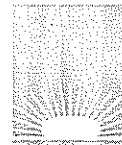
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	4,900	1,000		mg/Kg	100	4/24/2008 12:00:29 PM

Qualifiers:
ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 05-May-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-DUP 04

Lab Order: 0804736

Collection Date: 4/21/2008 12:05:00 PM

Project: COT-Silverbell

Lab ID: 0804736-13A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	840	10		mg/Kg	1	4/23/2008 5:55:36 PM
Arsenic	150	5.0		mg/Kg	1	4/23/2008 5:55:36 PM
Copper	370	5.0		mg/Kg	1	4/23/2008 5:55:36 PM
Lead	27,000	1,000		mg/Kg	100	4/24/2008 12:04:47 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

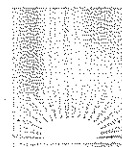
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



TURNER LABORATORIES, INC.

QC SUMMARY

LEVEL II

Turner Laboratories WO #:0804736

Client: Brown & Caldwell

Project Name: COT-Silverbell

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
 Work Order: 0804736
 Project: COT-Silverbell

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0804735-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:50:58 PM	Prep Date	4/22/2008			
Client ID:			Run ID: ICP_080423A		SeqNo:	620902					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.86	10	50	0	37.7	75	125	0			S
Arsenic	47.22	5	50	4.073	86.3	75	125	0			
Copper	71.37	5	50	29.49	83.7	75	125	0			
Lead	63.29	10	50	20.13	86.3	75	125	0			

Sample ID	0804735-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:55:51 PM	Prep Date	4/22/2008			
Client ID:			Run ID: ICP_080423A		SeqNo: 620903						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.94	10	50	0	35.9	75	125	18.86	5	20	S
Arsenic	46.82	5	50	4.073	85.5	75	125	47.22	0.858	20	
Copper	74.29	5	50	29.49	89.6	75	125	71.37	4.01	20	
Lead	62.67	10	50	20.13	85.1	75	125	63.29	0.977	20	

Sample ID	0804736-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:09:22 PM	Prep Date	4/22/2008			
Client ID:	COT-RF-01		Run ID: ICP_080423A		SeqNo:	620905					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	270.8	10	50	475.9	-410	75	125	0			S

Sample ID	0804736-01AMS	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 2:14:31 PM	Prep Date	4/22/2008			
Client ID:	COT-RF-01		Run ID: ICP_080423A		SeqNo:	620906					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	256.4	10	50	475.9	-439	75	125	270.8	5.43	20	S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804736
Project: COT-Silverbell

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID	0804736-10AMS	Batch ID: 10602	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 5:31:38 PM	Prep Date	4/22/2008			
Client ID:	COT-RF-10		Run ID: ICP_080423A		SeqNo: 620931						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	12.58	10	50	0	25.2	75	125	0			S
Arsenic	43.51	5	50	5.031	77	75	125	0			
Copper	153	5	50	106.7	92.7	75	125	0			
Lead	202.5	10	50	155.4	94.2	75	125	0			

Sample ID	0804736-10AMSD	Batch ID: 10602	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 5:36:41 PM	Prep Date	4/22/2008			
Client ID:	COT-RF-10		Run ID: ICP_080423A		SeqNo: 620932						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	12.73	10	50	0	25.5	75	125	12.58	1.18	20	S
Arsenic	42.89	5	50	5.031	75.7	75	125	43.51	1.44	20	
Copper	156.5	5	50	106.7	99.7	75	125	153	2.25	20	
Lead	251.7	10	50	155.4	193	75	125	202.5	21.6	20	SR

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Turner Laboratories, Inc.

Date: 05-May-08

CLIENT: Brown & Caldwell
Work Order: 0804736
Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:32:11 PM	Prep Date	4/22/2008			
Client ID:			Run ID: ICP_080423A		SeqNo:	620899					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	101.5	20	100	0	101	80	120	0			
Arsenic	100.8	10	100	0	101	80	120	0			
Copper	106.2	10	100	0	106	80	120	0			
Lead	104.5	20	100	0	104	80	120	0			

Sample ID	LCS-10601	Batch ID: 10601	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 1:36:45 PM	Prep Date	4/22/2008			
Client ID:			Run ID: ICP_080423A		SeqNo:	620900					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	102.1	20	100	0	102	80	120	101.5	0.595	20	
Arsenic	99.13	10	100	0	99.1	80	120	100.8	1.71	20	
Copper	106.1	10	100	0	106	80	120	106.2	0.082	20	
Lead	104	20	100	0	104	80	120	104.5	0.482	20	

Sample ID	LCS-10602	Batch ID: 10602	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/23/2008 5:13:18 PM	Prep Date	4/22/2008			
Client ID:			Run ID: ICP_080423A		SeqNo:	620928					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	102	20	100	0	102	80	120	0			
Arsenic	96.16	10	100	0	96.2	80	120	0			
Copper	107.3	10	100	0	107	80	120	0			
Lead	103.7	20	100	0	104	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804736
Project: COT-Silverbell

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID LCSD-10602		Batch ID: 10602		Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/23/2008 5:17:56 PM		Prep Date 4/22/2008	
Client ID:		Run ID: ICP_080423A		SeqNo: 620929							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	103.9	20	100	0	104	80	120	102	1.86	20	
Arsenic	97.36	10	100	0	97.4	80	120	96.16	1.25	20	
Copper	108.1	10	100	0	108	80	120	107.3	0.766	20	
Lead	105.1	20	100	0	105	80	120	103.7	1.4	20	
<hr/>											
Sample ID LCS-10601		Batch ID: 10601		Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/24/2008 11:07:32 AM		Prep Date 4/22/2008	
Client ID:		Run ID: ICP_080424A		SeqNo: 621125							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	105.5	20	100	0	105	80	120	0			
<hr/>											
Sample ID LCSD-10601		Batch ID: 10601		Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/24/2008 11:12:09 AM		Prep Date 4/22/2008	
Client ID:		Run ID: ICP_080424A		SeqNo: 621126							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	105.1	20	100	0	105	80	120	105.5	0.366	20	
<hr/>											
Sample ID LCS-10602		Batch ID: 10602		Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/24/2008 11:47:00 AM		Prep Date 4/22/2008	
Client ID:		Run ID: ICP_080424A		SeqNo: 621131							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	104.4	20	100	0.4225	104	80	120	0			
<hr/>											
Sample ID LCSD-10602		Batch ID: 10602		Test Code: SW6010B		Units: mg/Kg		Analysis Date 4/24/2008 11:51:36 AM		Prep Date 4/22/2008	
Client ID:		Run ID: ICP_080424A		SeqNo: 621132							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	104.2	20	100	0.4225	104	80	120	104.4	0.15	20	

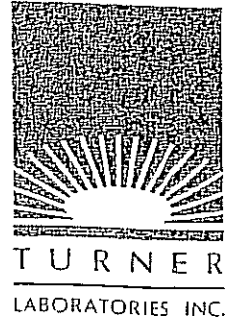
Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804736

Received By: DW

Received Date/Time: 4/21/08 10:28

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 8
13. Number of sample containers received? 13

Additional Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 08047360

DATE 4-21-2008

PAGE 2 OF 3

PROJECT NAME <u>COT-SILVERBELL</u> # _____ CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CALDWELL</u> ADDRESS <u>110 S. Church Ave., Ste 2300</u> <u>Tucson 85701</u> PHONE <u>604-5744</u> FAX _____ SAMPLER'S SIGNATURE <u>Michele Mahal</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
NUMBER OF CONTAINERS		Volatile Organics <input type="checkbox"/> 624/5242/8260 Base Neutrals <input type="checkbox"/> 625/8270 Acids <input type="checkbox"/> TTHMS <input type="checkbox"/> HAAS <input type="checkbox"/> PCBs <input type="checkbox"/> B082 <input type="checkbox"/> Total Petroleum Hydrocarbons <input type="checkbox"/> 1664A Oil and Grease <input type="checkbox"/> 1664A Grav. 1664A <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Semi-VOA <input type="checkbox"/> Pest./Herb. <input type="checkbox"/> Metals <input type="checkbox"/> Total <input type="checkbox"/> Priority Pollutants <input type="checkbox"/> Cyanide <input type="checkbox"/> Amen. <input type="checkbox"/> WAD <input type="checkbox"/> SDWA-INORGANICS <input type="checkbox"/> PRIMARY <input type="checkbox"/> SECONDARY <input type="checkbox"/> Coliform <input type="checkbox"/> Collet <input type="checkbox"/> pH <input type="checkbox"/> COD <input type="checkbox"/> TSS <input type="checkbox"/> BOD <input type="checkbox"/>			
SAMPLE ID.	DATE	TIME	LAB ID.	SAMPLE MATRIX*	TOTAL Pb TOTAL Sb, As, Cu
COT-RF-01	4-21-08	1330		SL	X
COT-RF-02		1335			X
COT-RF-03		1340			X
COT-RF-04		1345			X
COT-RF-05		1350			X
COT-RF-06		1355			X
COT-RF-07		1400			X
COT-RF-08		1410			X
COT-RF-09		1415			X
COT-RF-10		1420			X

1. RELINQUISHED BY: Signature <u>Michele Mahal</u> Printed Name <u>Michele Mahal</u> Firm <u>BA</u> Date/Time <u>4-21-08 1625</u>		2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____		4. RECEIVED BY: Signature <u>Samuel</u> Printed Name <u>Samuel</u> Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>4/21/08 16:25</u>	
TURNAROUND REQUIREMENTS: Standard (approx. 10 days)* Next Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* Fax Preliminary Results Requested Report Date _____ * Working Days		REPORT REQUIREMENTS: I. Routine Report <input checked="" type="checkbox"/> II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to invoice		INVOICE INFORMATION: Account _____ Y _____ N P.O. # _____ Bill to: _____ Temperature _____ Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/>		SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER	

PROJECT NAME <u>COT - SILVERBELL</u> # _____ CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CADWELL</u> ADDRESS <u>110 S. Church Ave. Ste. 2300</u> <u>Tucson 85701</u> PHONE <u>624.5744</u> FAX _____ SAMPLER'S SIGNATURE <u>[Signature]</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
NUMBER OF CONTAINERS				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
SAMPLE ID. DATE TIME LAB ID. SAMPLE MATRIX*					
COT-RF-11 4-21-08 1430 SL					
COT-RF-12 1435 ↓					
COT-DUP04 1205 ↓					
Volatile Organics 624/524.2/8260 Base Neutrals 625/8270 Acids TTHMS HAAS PCBs Total Petroleum Hydrocarbons 8082 IR(8015A2) Oil and Grease 1664A Cray, 1664A VOA TCP Analysis Semi-VOA Pst./Herb. Metals Total Priority Pollutants Granide Amen. WAD SECONDARY Coliform pH COD TSS BOD					
TOTAL AS, Sb, Cu TOTAL Pb					
TOTAL AS, Sb, Cu TOTAL Pb					

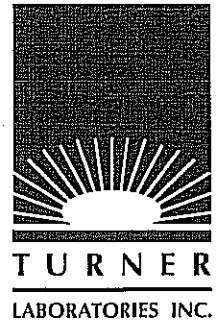
1. RELINQUISHED BY: <u>[Signature]</u> Signature <u>Michelle Mahad</u> Printed Name <u>BC</u> Firm <u>4-21-08 1625</u> Date/Time		2. RECEIVED BY: Signature Printed Name Firm Date/Time		3. RELINQUISHED BY: Signature Printed Name Firm Date/Time	
2. TURNAROUND REQUIREMENTS: <u>Standard (approx. 10 days)*</u> Next Day 2 Day 5 Day* Fax Preliminary Results Requested Report Date _____ * Working Days		REPORT REQUIREMENTS: I. Routine Report II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to Invoice		INVOICE INFORMATION: Account _____ Y _____ N P.O. # _____ Bill to: _____ Temperature _____ Total Containers <u>13</u> Sweet Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/>	
SPECIAL INSTRUCTIONS/COMMENTS: * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No					

DISTRIBUTION: WHITE - return to originator

PINK - retained by originator

See back of pink copy for general terms and conditions/limits of liability.

May 12, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell 134.894

Order No.: 0804855

Dear Keith Fritz,

Turner Laboratories, Inc. received 6 samples on 4/25/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066



Shari Bauman
Laboratory Director

CC:



CLIENT: Brown & Caldwell
Project: COT-Silverbell 134.894
Lab Order: 0804855

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0804855-02 through -06: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804855
Project: COT-Silverbell 134.894
Lab ID: 0804855-01A

Client Sample ID: COT-EB0425085
Collection Date: 4/25/2008 8:25:00 AM

Matrix: GROUNDWATER

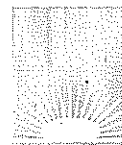
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP (TOTAL) METALS						
		E200.7				Analyst: RAD
Copper	ND	0.020		mg/L	1	5/1/2008 3:30:45 PM
GFAA METALS IN WATER						
		E200.9				Analyst: RAD
Antimony	ND	0.0048		mg/L	1	5/2/2008 7:56:00 PM
Arsenic	ND	0.0050		mg/L	1	5/6/2008 3:05:00 PM
Lead	ND	0.0050		mg/L	1	5/7/2008 12:59:00 PM
Selenium	ND	0.0050		mg/L	1	5/1/2008 8:38:00 PM
Thallium	ND	0.0016		mg/L	1	5/5/2008 5:06:00 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804855
Project: COT-Silverbell 134.894
Lab ID: 0804855-02A

Client Sample ID: COT-SB-05+03
Collection Date: 4/25/2008 9:00:00 AM

Matrix: SOIL

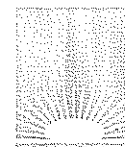
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/30/2008 9:57:12 AM
Lead	64	10		mg/Kg	1	4/29/2008 8:35:56 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804855
Project: COT-Silverbell 134.894
Lab ID: 0804855-03A

Client Sample ID: COT-PB-02+06
Collection Date: 4/25/2008 9:10:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	4/29/2008 8:05:26 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

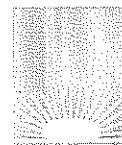
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell

Client Sample ID: COT-PB-03+06

Lab Order: 0804855

Collection Date: 4/25/2008 9:15:00 AM

Project: COT-Silverbell 134.894

Lab ID: 0804855-04A

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	15	10		mg/Kg	1	4/29/2008 8:39:58 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

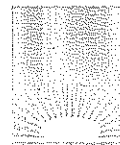
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804855
Project: COT-Silverbell 134.894
Lab ID: 0804855-05A

Client Sample ID: COT-PB-06+06
Collection Date: 4/25/2008 9:20:00 AM

Matrix: SOIL

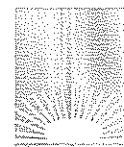
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/30/2008 10:01:13 AM
Arsenic	6.3	5.0		mg/Kg	1	4/29/2008 8:43:59 PM
Lead	87	10		mg/Kg	1	4/29/2008 8:43:59 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 12-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804855
Project: COT-Silverbell 134.894
Lab ID: 0804855-06A

Client Sample ID: COT-DUP05
Collection Date: 4/25/2008 12:00:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	4/30/2008 10:05:13 AM
Lead	76	10		mg/Kg	1	4/29/2008 8:48:00 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

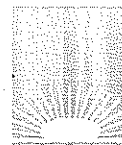
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Lab Work Order #: 0804855

Client: Brown and Caldwell

Project: COT Silverbell

Turner Laboratories, Inc.

Date: 12-May-08

CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT

Method Blank

Sample ID MB-10636 Batch ID: 10636 Test Code: E200.7 Units: mg/L Analysis Date 5/1/2008 10:53:00 AM Prep Date 5/1/2008
 Client ID: Run ID: ICP_080501A SeqNo: 622722
 Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

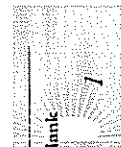
Cadmium ND 0.003
 Chromium ND 0.03
 Copper ND 0.02

Qualifiers:

ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/2/2008 5:55:00 PM	Prep Date	5/1/2008
Client ID:		Run ID:	GFAA_SIMAA_080502A		SeqNo:	622999		
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony		ND	0.0048					
Sample ID	MB-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/6/2008 1:03:00 PM	Prep Date	5/1/2008
Client ID:		Run ID:	GFAA_SIMAA_080506A		SeqNo:	623471		
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val
Arsenic		ND	0.005					
Sample ID	MB-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/7/2008 11:18:00 AM	Prep Date	5/1/2008
Client ID:		Run ID:	GFAA_SIMAA_080507A		SeqNo:	624228		
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val
Lead		ND	0.005					

CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-10618	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/29/2008 7:47:44 PM	Prep Date 4/28/2008
Client ID:		Run ID: ICP_080429A			SeqNo: 621992	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	ND	20				
Arsenic	0.3663	10				J
Lead	0.02209	20				J

Sample ID	MB-10618	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date 4/30/2008 9:39:31 AM	Prep Date 4/28/2008
Client ID:		Run ID: ICP_080430B			SeqNo: 622178	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	ND	20				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 12-May-08

CLIENT: Brown & Caldwell

Work Order: 0804855

Project: COT-Silverbell 134.894

QC SUMMARY REPORT

Sample Matrix Spike

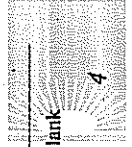
Sample ID: 0804876-03AMS	Batch ID: 10636	Test Code: E200.7	Units: mg/L	Analysis Date: 5/1/2008 2:42:18 PM	Prep Date: 5/1/2008
Client ID:	Run ID:	ICP_080501A		SeqNo: 622681	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cadmium	0.04869	0.003	0.05	0	97.4 70 130 0
Chromium	0.2049	0.03	0.2	0	102 70 130 0
Copper	0.2712	0.02	0.25	0	108 70 130 0

Sample ID: 0804855-01AMS	Batch ID: 10636	Test Code: E200.7	Units: mg/L	Analysis Date: 5/1/2008 3:35:06 PM	Prep Date: 5/1/2008
Client ID: COT-EB0425085	Run ID:	ICP_080501A		SeqNo: 622688	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Copper	0.2594	0.02	0.25	0	104 70 130 0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID	0804855-03AMS	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/29/2008 8:10:19 PM	Prep Date	4/28/2008				
Client ID:	COT-PB-02+06		Run ID: ICP_080429A		SeqNo: 621996							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		51.86	10	50	22.48	58.8	75	125	0			S

Sample ID	0804855-03AMSD	Batch ID: 10618	Test Code: SW6010B	Units: mg/Kg	Analysis Date	4/29/2008 8:14:33 PM	Prep Date	4/28/2008				
Client ID:	COT-PB-02+06		Run ID: ICP_080429A		SeqNo: 621997							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		53.13	10	50	22.48	61.3	75	125	51.86	2.42	20	S

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Turner Laboratories, Inc.

Date: 12-May-08

CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-10636	Batch ID: 10636	Test Code: E200.7	Units: mg/L	Analysis Date	5/1/2008 10:57:00 AM	Prep Date	5/1/2008			
Client ID:			Run ID: ICP_080501A		SeqNo:	622723					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.04933	0.003	0.05	0	98.7	85	115	0			
Chromium	0.2018	0.03	0.2	0	101	85	115	0			
Copper	0.2738	0.02	0.25	0	110	85	115	0			

Sample ID	LCSD-10636	Batch ID: 10636	Test Code: E200.7	Units: mg/L	Analysis Date	5/1/2008 11:01:00 AM	Prep Date	5/1/2008			
Client ID:			Run ID: ICP_080501A		SeqNo:	622724					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.04995	0.003	0.05	0	99.9	85	115	0.04933	1.25	20	
Chromium	0.2032	0.03	0.2	0	102	85	115	0.2018	0.691	20	
Copper	0.2774	0.02	0.25	0	111	85	115	0.2738	1.31	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Brown & Caldwell
 Work Order: 0804855
 Project: COT-Silverbell 134.894

Sample ID	LCS-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/2/2008 6:01:00 PM	Prep Date	5/1/2008				
Client ID:			Run ID: GFAA_SIMAA_080502A		SeqNo: 623000							
Analyte	Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.01048		0.0048	0.01	0	105	85	115	0			*
Sample ID	LCSD-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/2/2008 6:23:00 PM	Prep Date	5/1/2008				
Client ID:			Run ID: GFAA_SIMAA_080502A		SeqNo: 623001							
Analyte	Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.01011		0.0048	0.01	0	101	85	115	0.01048	3.59	20	*
Sample ID	LCS-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/6/2008 1:10:00 PM	Prep Date	5/1/2008				
Client ID:			Run ID: GFAA_SIMAA_080506A		SeqNo: 623472							
Analyte	Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.009737		0.005	0.01	0	97.4	85	115	0			
Sample ID	LCSD-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/6/2008 1:16:00 PM	Prep Date	5/1/2008				
Client ID:			Run ID: GFAA_SIMAA_080506A		SeqNo: 623473							
Analyte	Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.009712		0.005	0.01	0	97.1	85	115	0.009737	0.257	20	
Sample ID	LCS-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/7/2008 11:39:00 AM	Prep Date	5/1/2008				
Client ID:			Run ID: GFAA_SIMAA_080507A		SeqNo: 624229							
Analyte	Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.01032		0.005	0.01	0	103	85	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID	LCSD-10636	Batch ID: 10636	Test Code: E200.9	Units: mg/L	Analysis Date	5/7/2008 11:46:00 AM	Prep Date	5/1/2008				
Client ID:		Run ID:	GFAA_SIMAA_080507A		SeqNo:	624230						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.0103	0.005	0.01	0	103	85	115	0.01032	0.194	20	

CLIENT: Brown & Caldwell
Work Order: 0804855
Project: COT-Silverbell 134.894

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS-10618 Batch ID: 10618 Test Code: SW6010B Units: mg/Kg Analysis Date 4/29/2008 7:52:05 PM Prep Date 4/28/2008
Client ID: Run ID: ICP_080429A SeqNo: 621993

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	92.98	20	100	0	93	80	120	0			
Arsenic	96.24	10	100	0.3663	95.9	80	120	0			
Lead	106.2	20	100	0.02209	106	80	120	0			

Sample ID LCSD-10618 Batch ID: 10618 Test Code: SW6010B Units: mg/Kg Analysis Date 4/29/2008 7:56:38 PM Prep Date 4/28/2008
Client ID: Run ID: ICP_080429A SeqNo: 621994

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	90.7	20	100	0	90.7	80	120	92.98	2.48	20	
Arsenic	93.71	10	100	0.3663	93.3	80	120	96.24	2.66	20	
Lead	103.7	20	100	0.02209	104	80	120	106.2	2.34	20	

Sample ID LCS-10618 Batch ID: 10618 Test Code: SW6010B Units: mg/Kg Analysis Date 4/30/2008 9:43:47 AM Prep Date 4/28/2008
Client ID: Run ID: ICP_080430B SeqNo: 622179

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	113.5	20	100	0	114	80	120	0			

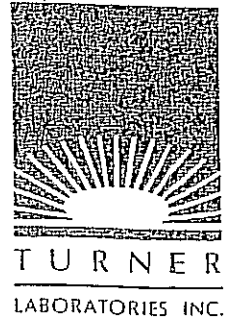
Sample ID LCSD-10618 Batch ID: 10618 Test Code: SW6010B Units: mg/Kg Analysis Date 4/30/2008 9:48:22 AM Prep Date 4/28/2008
Client ID: Run ID: ICP_080430B SeqNo: 622180

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	113.9	20	100	0	114	80	120	113.5	0.341	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0804855

Received By: DW

Received Date/Time: 4/25/08 1655

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 16
13. Number of sample containers received? 6

Additional Comments:

PROJECT NAME <u>COT-SILVERBEL</u> # <u>134,894</u> CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CALDWELL</u> ADDRESS <u>110 S. Church Ave, 2300</u> <u>Tucson 85701</u> PHONE <u>624.5744</u> FAX _____ SAMPLER'S SIGNATURE _____				NUMBER OF CONTAINERS Acids <input type="checkbox"/> Volatile Organics 625/8270 Base Neutrals 624/5242/8260 TTHMS <input type="checkbox"/> HAAS <input type="checkbox"/> PCBs <input type="checkbox"/> BOD <input type="checkbox"/>		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																						
SAMPLE I.D. <u>COT-EB042508S</u> <u>COT-SB-05+03</u> <u>COT-SPB-02+06</u> <u>COT-PB-03+06</u> <u>COT-PB-06+06</u> <u>COT-DUP05</u>		DATE <u>4-25-08</u> <u>0900</u> <u>0910</u> <u>0915</u> <u>0920</u> <u>1200</u>		TIME <u>0825</u> <u>0900</u> <u>0910</u> <u>0915</u> <u>0920</u> <u>1200</u>		LAB I.D. <u>W</u> <u>SL</u> <u>↑</u> <u>↑</u> <u>↑</u> <u>↑</u>		SAMPLE MATRIX* <u>W</u> <u>SL</u> <u>↑</u> <u>↑</u> <u>↑</u> <u>↑</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td><input type="checkbox"/> Acids</td> <td><input type="checkbox"/> Volatile Organics 624/5242/8260</td> <td><input type="checkbox"/> TTHMS</td> <td><input type="checkbox"/> HAAS</td> <td><input type="checkbox"/> PCBs</td> <td><input type="checkbox"/> BOD</td> <td><input type="checkbox"/> Total Petroleum Hydrocarbons 8081</td> <td><input type="checkbox"/> Pesticides 8081</td> <td><input type="checkbox"/> Oil and Grease 1664A</td> <td><input type="checkbox"/> Cray. 1664A</td> <td><input type="checkbox"/> VOA</td> <td><input type="checkbox"/> TCP Analysis</td> <td><input type="checkbox"/> Metals</td> <td><input type="checkbox"/> Total</td> <td><input type="checkbox"/> Cyanide</td> <td><input type="checkbox"/> SDWA-INORGANICS</td> <td><input type="checkbox"/> APN</td> <td><input type="checkbox"/> pH</td> <td><input type="checkbox"/> COD</td> <td><input type="checkbox"/> TSS</td> <td><input type="checkbox"/> BOD</td> <td><input type="checkbox"/> Total Pb</td> <td><input type="checkbox"/> Total Sb</td> <td><input type="checkbox"/> Total As</td> <td><input type="checkbox"/> Total Cu</td> </tr> </table>										<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics 624/5242/8260	<input type="checkbox"/> TTHMS	<input type="checkbox"/> HAAS	<input type="checkbox"/> PCBs	<input type="checkbox"/> BOD	<input type="checkbox"/> Total Petroleum Hydrocarbons 8081	<input type="checkbox"/> Pesticides 8081	<input type="checkbox"/> Oil and Grease 1664A	<input type="checkbox"/> Cray. 1664A	<input type="checkbox"/> VOA	<input type="checkbox"/> TCP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Total	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> APN	<input type="checkbox"/> pH	<input type="checkbox"/> COD	<input type="checkbox"/> TSS	<input type="checkbox"/> BOD	<input type="checkbox"/> Total Pb	<input type="checkbox"/> Total Sb	<input type="checkbox"/> Total As	<input type="checkbox"/> Total Cu
<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics 624/5242/8260	<input type="checkbox"/> TTHMS	<input type="checkbox"/> HAAS	<input type="checkbox"/> PCBs	<input type="checkbox"/> BOD	<input type="checkbox"/> Total Petroleum Hydrocarbons 8081	<input type="checkbox"/> Pesticides 8081	<input type="checkbox"/> Oil and Grease 1664A	<input type="checkbox"/> Cray. 1664A	<input type="checkbox"/> VOA	<input type="checkbox"/> TCP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Total	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> APN	<input type="checkbox"/> pH	<input type="checkbox"/> COD	<input type="checkbox"/> TSS	<input type="checkbox"/> BOD	<input type="checkbox"/> Total Pb	<input type="checkbox"/> Total Sb	<input type="checkbox"/> Total As	<input type="checkbox"/> Total Cu																				
1. RELINQUISHED BY: <u>Michelle Mahal</u> Signature Printed Name <u>Brown & Caldwell</u> Firm <u>4.25.08 1655</u> Date/Time				2. RECEIVED BY: <u>Keith Fritz</u> Signature Printed Name Firm <u>4.25.08 0900</u> Date/Time				TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days)* Next Day 2 Day 5 Day* Fax Preliminary Results Requested Report Date _____ * Working Days				REPORT REQUIREMENTS: I. Routine Report II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to Invoice				INVOICE INFORMATION: Account _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>50</u> Temperature <u>16</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice				SAMPLE RECEIPT: _____ _____ _____ _____ _____																								
3. RELINQUISHED BY: <u>Keith Fritz</u> Signature Printed Name Firm <u>4.25.08 1655</u> Date/Time				4. RECEIVED BY: <u>Michelle Mahal</u> Signature Printed Name Firm <u>4.25.08 1655</u> Date/Time				SPECIAL INSTRUCTIONS/COMMENTS: * LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No																																				



May 15, 2008

Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell 134894

Order No.: 0804889

Dear Keith Fritz,

Turner Laboratories, Inc. received 7 samples on 4/29/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-01A

Client Sample ID: COT-AB-0429-01
Collection Date: 4/29/2008 8:25:00 AM

Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:02:40 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-02A

Client Sample ID: COT-AB-0429-02
Collection Date: 4/29/2008 8:30:00 AM

Matrix: SOLID

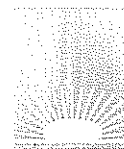
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:07:01 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-03A

Client Sample ID: COT-AB-0429-03
Collection Date: 4/29/2008 8:35:00 AM

Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:11:16 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-04A

Client Sample ID: COT-AB-0429-04
Collection Date: 4/29/2008 8:40:00 AM

Matrix: SOLID

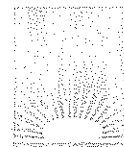
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:15:30 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-05A

Client Sample ID: COT-AB-0429-05
Collection Date: 4/29/2008 8:45:00 AM

Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:19:44 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-06A

Client Sample ID: COT-AB-0429-06
Collection Date: 4/29/2008 8:50:00 AM

Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:24:00 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0804889
Project: COT-Silverbell 134894
Lab ID: 0804889-07A

Client Sample ID: COT-EB042908LT
Collection Date: 4/29/2008 8:00:00 AM

Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/2/2008 5:28:16 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. # 0804889

Received By: Dee

Received Date/Time: 4/29/08 9:40

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 7
13. Number of sample containers received? 7

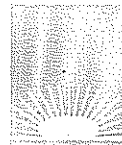
Additional Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 0804289 DATE 4.29.2008 PAGE 1 OF 1

TURNER LABORATORY, INC.
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

PROJECT NAME <u>COT-SILVERBEL</u> # <u>134894</u> CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CALDWELL</u> ADDRESS <u>110 S. Church Ave, Ste 2300</u> <u>Tucson 85701</u> PHONE <u>624-5744</u> FAX SAMPLER'S SIGNATURE <u>Michele</u>				CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td><input type="checkbox"/> Acids</td> <td><input type="checkbox"/> Volatile Organics</td> <td><input type="checkbox"/> TTHMS</td> <td><input type="checkbox"/> HAAS</td> <td><input type="checkbox"/> PCBs</td> <td><input type="checkbox"/> 8082</td> <td><input type="checkbox"/> Total Petroleum Hydrocarbons</td> <td><input type="checkbox"/> 1644A</td> <td><input type="checkbox"/> Grav. 1644A</td> <td><input type="checkbox"/> VOA</td> <td><input type="checkbox"/> TCLP Analysis</td> <td><input type="checkbox"/> Metals</td> <td><input type="checkbox"/> Total</td> <td><input type="checkbox"/> Priority Pollutants</td> <td><input type="checkbox"/> Cyanide</td> <td><input type="checkbox"/> Amen.</td> <td><input type="checkbox"/> WAD</td> <td><input type="checkbox"/> SECONDARY</td> <td><input type="checkbox"/> Coliform</td> <td><input type="checkbox"/> Collet</td> <td><input type="checkbox"/> q, b</td> <td><input type="checkbox"/> TSS</td> <td><input type="checkbox"/> COD</td> <td><input type="checkbox"/> BOD</td> </tr> </table>				<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> TTHMS	<input type="checkbox"/> HAAS	<input type="checkbox"/> PCBs	<input type="checkbox"/> 8082	<input type="checkbox"/> Total Petroleum Hydrocarbons	<input type="checkbox"/> 1644A	<input type="checkbox"/> Grav. 1644A	<input type="checkbox"/> VOA	<input type="checkbox"/> TCLP Analysis	<input type="checkbox"/> Metals	<input type="checkbox"/> Total	<input type="checkbox"/> Priority Pollutants	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Amen.	<input type="checkbox"/> WAD	<input type="checkbox"/> SECONDARY	<input type="checkbox"/> Coliform	<input type="checkbox"/> Collet	<input type="checkbox"/> q, b	<input type="checkbox"/> TSS	<input type="checkbox"/> COD	<input type="checkbox"/> BOD																																
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NUMBER OF CONTAINERS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%;">COT-AB-0429-01</td> <td style="width:10%;">DATE</td> <td style="width:10%;">TIME</td> <td style="width:10%;">LAB I.D.</td> <td style="width:10%;">SAMPLE MATRIX*</td> <td style="width:40%;"></td> </tr> <tr> <td>COT-AB-0429-02</td> <td>4.29.08</td> <td>0825</td> <td></td> <td>wipe</td> <td></td> </tr> <tr> <td>COT-AB-0429-03</td> <td></td> <td>0830</td> <td></td> <td></td> <td></td> </tr> <tr> <td>COT-AB-0429-04</td> <td></td> <td>0835</td> <td></td> <td></td> <td></td> </tr> <tr> <td>COT-AB-0429-05</td> <td></td> <td>0840</td> <td></td> <td></td> <td></td> </tr> <tr> <td>COT-AB-0429-06</td> <td></td> <td>0845</td> <td></td> <td></td> <td></td> </tr> <tr> <td>COT-AB-0429-07</td> <td></td> <td>0850</td> <td></td> <td></td> <td></td> </tr> <tr> <td>COT-AB-0429-08</td> <td></td> <td>0800</td> <td></td> <td></td> <td></td> </tr> </table>				COT-AB-0429-01	DATE	TIME	LAB I.D.	SAMPLE MATRIX*		COT-AB-0429-02	4.29.08	0825		wipe		COT-AB-0429-03		0830				COT-AB-0429-04		0835				COT-AB-0429-05		0840				COT-AB-0429-06		0845				COT-AB-0429-07		0850				COT-AB-0429-08		0800				TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days)* Next Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* Fax Preliminary Results Requested Report Date _____ * Working Days				REPORT REQUIREMENTS: I. Routine Report <input checked="" type="checkbox"/> II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to invoice				INVOICE INFORMATION: Account <u>134894</u> P.O. # _____ Bill to: _____ Total Containers <u>7</u> Temperature _____ <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice			
COT-AB-0429-01	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																																																											
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COT-AB-0429-03		0830																																																													
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COT-AB-0429-07		0850																																																													
COT-AB-0429-08		0800																																																													
1. RELINQUISHED BY: <u>Michele Mahal</u> Signature _____ Printed Name <u>Michele Mahal</u> Firm <u>Brown & Caldwell</u> Date/Time <u>4.29.08 0840</u>				2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____				3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____				4. RECEIVED BY: <u>Dawn Weyer</u> Signature _____ Printed Name <u>Dawn Weyer</u> Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>4/29/08 9:40</u>																																																			
* LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER												SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No																																																			



TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0804889

Client: Brown and Caldwell

Project: COT-Silverbell 134894

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell

Work Order: 0804889

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10637	Batch ID: 10637	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/2/2008 4:23:18 PM	Prep Date: 5/1/2008
Client ID:		Run ID: ICP_080502A		SeqNo: 622878	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Lead	ND				
				HighLimit	RPD Ref Val
				%RPD	RPDLimit
					Qual

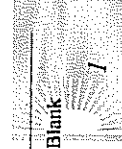
Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell
Work Order: 0804889
Project: COT-Silverbell 134894

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 0804861-01AMS Batch ID: 10637 Test Code: SW6010B Units: mg/Kg Analysis Date: 5/2/2008 4:45:04 PM Prep Date: 5/1/2008
Client ID: Run ID: ICP_080502A SeqNo: 622882

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	52.13	10	50	0	104	75	125	0			

Sample ID: 0804861-01AMSD Batch ID: 10637 Test Code: SW6010B Units: mg/Kg Analysis Date: 5/2/2008 4:49:35 PM Prep Date: 5/1/2008
Client ID: Run ID: ICP_080502A SeqNo: 622883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.51	10	50	0	103	75	125	52.13	1.19	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell

Work Order: 0804889

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-10637	Batch ID: 10637	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/2/2008 4:27:36 PM	Prep Date: 5/1/2008						
Client ID:		Run ID: ICP_080502A		SeqNo: 622879							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	100.2	20	100	0	100	80	120	0			

Sample ID: LCSD-10637	Batch ID: 10637	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/2/2008 4:32:03 PM	Prep Date: 5/1/2008						
Client ID:		Run ID: ICP_080502A		SeqNo: 622880							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	102.5	20	100	0	103	80	120	100.2	2.28	20	

Qualifiers: ND - Not Detected at the Reporting Limit

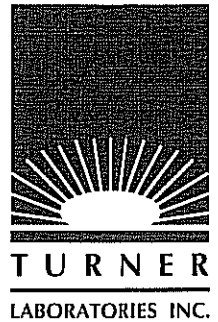
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

May 15, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell 134894

Order No.: 0805051

Dear Keith Fritz,

Turner Laboratories, Inc. received 10 samples on 5/2/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

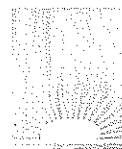
Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Project: COT-Silverbell 134894
Lab Order: 0805051

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0805051-02 through -09: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-01A

Client Sample ID: COT-EB042908LW
Collection Date: 4/29/2008 8:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/7/2008 2:21:59 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

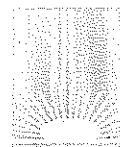
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-02A

Client Sample ID: COT-RF-01+03
Collection Date: 5/1/2008 1:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	47	10		mg/Kg	1	5/7/2008 2:26:20 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-03A

Client Sample ID: COT-RF-04+06
Collection Date: 5/1/2008 1:40:00 PM
Matrix: SOIL

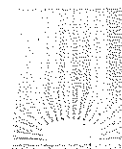
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:31:59 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-04A

Client Sample ID: COT-RF-03+06
Collection Date: 5/1/2008 1:45:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	5/7/2008 2:37:30 PM
Arsenic	7.9	5.0		mg/Kg	1	5/7/2008 2:37:30 PM
Lead	31	10		mg/Kg	1	5/7/2008 2:37:30 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08

CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-05A

Client Sample ID: COT-RF-06+06
Collection Date: 5/1/2008 1:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	5/7/2008 1:34:09 PM
Arsenic	7.1	5.0		mg/Kg	1	5/7/2008 1:34:09 PM
Lead	21	10		mg/Kg	1	5/7/2008 1:34:09 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-06A

Client Sample ID: COT-RF-05+06
Collection Date: 5/1/2008 4:30:00 PM

Matrix: SOIL

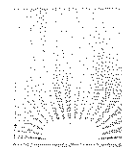
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:42:15 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-07A

Client Sample ID: COT-RF-07+06
Collection Date: 5/1/2008 2:45:00 PM

Matrix: SOIL

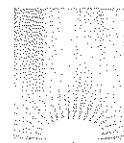
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	5/7/2008 2:47:48 PM
Arsenic	7.5	5.0		mg/Kg	1	5/7/2008 2:47:48 PM
Lead	63	10		mg/Kg	1	5/7/2008 2:47:48 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-08A

Client Sample ID: COT-RF-12+03
Collection Date: 5/1/2008 4:25:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:53:20 PM

Qualifiers:

ND - Not Detected at or above the PQL

I - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

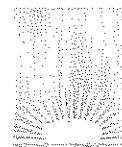
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-09A

Client Sample ID: COT-DUP06
Collection Date: 5/1/2008 12:00:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	5/7/2008 2:58:43 PM
Arsenic	7.8	5.0		mg/Kg	1	5/7/2008 2:58:43 PM
Lead	37	10		mg/Kg	1	5/7/2008 2:58:43 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-10A

Client Sample ID: EB0502085
Collection Date: 5/2/2008 9:50:00 AM

Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP (TOTAL) METALS						
		E200.7				Analyst: RAD
Copper	ND	0.020		mg/L	1	5/8/2008 5:44:18 PM
GFAA METALS IN WATER						
		E200.9				Analyst: RAD
Antimony	ND	0.0048		mg/L	1	5/13/2008 1:47:00 PM
Arsenic	ND	0.0050		mg/L	1	5/8/2008 5:42:00 PM
Arsenic	ND	0.0050		mg/L	1	5/6/2008 5:23:00 PM
Lead	ND	0.0050		mg/L	1	5/7/2008 3:09:00 PM
Selenium	ND	0.0050		mg/L	1	5/9/2008 2:46:00 PM
Thallium	ND	0.0016		mg/L	1	5/14/2008 1:13:00 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0805051

Received By: DW

Received Date/Time: 5-2-08 11:35

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 1
13. Number of sample containers received? 10

Additional Comments:

TURNER
LABORATORIES, INC.
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

PAGE 1 OF 7

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TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0805051

Client: Brown and Caldwell

Project: COT-Silverbell 134894

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:22:00 PM	Prep Date: 5/5/2008						
Client ID:		Run ID: ICP_080508A		SeqNo: 624715							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.003									
Chromium	ND	0.03									
Copper	ND	0.02									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT
 Method Blank

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/6/2008 1:03:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080506A SeqNo: 623485

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic ND 0.005

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/7/2008 11:18:00 AM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080507A SeqNo: 624248

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead ND 0.005

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/8/2008 2:30:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080508A SeqNo: 624571

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic ND 0.005

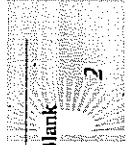
Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/13/2008 12:22:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080513A SeqNo: 625240

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony ND 0.0048

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits



CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10648 **Batch ID:** 10648 **Test Code:** SW6010B **Units:** mg/Kg **Analysis Date:** 5/7/2008 12:59:05 PM **Prep Date:** 5/5/2008
Client ID: **Run ID:** ICP_080507A **SeqNo:** 623696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	20									
Arsenic	ND	10									
Lead	ND	20									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell
 Work Order: 0805051
 Project: COT-Silverbell 134894

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0805050-01AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:21:24 PM		Prep Date: 5/5/2008	
Client ID:		Run ID:	ICP_080507A		SeqNo: 623700			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Lead	142.5	10	50	105.9	73.2	75	125	0
								S

Sample ID: 0805050-01AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:25:39 PM		Prep Date: 5/5/2008	
Client ID:		Run ID:	ICP_080507A		SeqNo: 623701			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Lead	152.2	10	50	105.9	92.6	75	125	142.5
								6.58
								20

Sample ID: 0805051-05AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:39:52 PM		Prep Date: 5/5/2008	
Client ID: COT-RF-06+06		Run ID:	ICP_080507A		SeqNo: 623703			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony	11.08	10	50	0	22.2	75	125	0
Arsenic	47.7	5	50	7.117	81.2	75	125	0
Lead	55.43	10	50	21.15	68.6	75	125	0
								S
								S

Sample ID: 0805051-05AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:44:49 PM		Prep Date: 5/5/2008	
Client ID: COT-RF-06+06		Run ID:	ICP_080507A		SeqNo: 623704			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony	11.67	10	50	0	23.3	75	125	11.08
Arsenic	48.28	5	50	7.117	82.3	75	125	47.7
Lead	58.62	10	50	21.15	74.9	75	125	55.43
								5.19
								1.21
								5.58
								20
								20
								20

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell

Work Order: 0805051

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:26:00 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080508A	PQL	SPK value	SeqNo: 624716	
Analyte	Result			LowLimit	HighLimit
Cadmium	0.04448	0.003	0.05	85	115
Chromium	0.1872	0.03	0.2	85	115
Copper	0.2751	0.02	0.25	85	115
				%REC	RPD Ref Val
					%RPD
					RPDLimit
					Qual

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:31:00 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080508A	PQL	SPK value	SeqNo: 624717	
Analyte	Result			LowLimit	HighLimit
Cadmium	0.04425	0.003	0.05	85	115
Chromium	0.1865	0.03	0.2	85	115
Copper	0.2737	0.02	0.25	85	115
				%REC	RPD Ref Val
					%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
 Work Order: 0805051
 Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/6/2008 1:10:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080506A		SeqNo: 623486	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.009737	0.005	0.01	0	97.4 85 115 0

Sample ID: LCSD-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/6/2008 1:16:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080506A		SeqNo: 623487	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.009712	0.005	0.01	0	97.1 85 115 0.009737 0.257 20

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/7/2008 11:39:00 AM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080507A		SeqNo: 624249	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	0.01032	0.005	0.01	0	103 85 115 0

Sample ID: LCSD-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/7/2008 11:46:00 AM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080507A		SeqNo: 624250	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	0.0103	0.005	0.01	0	103 85 115 0.01032 0.194 20

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/8/2008 2:37:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080508A		SeqNo: 624572	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.0107	0.005	0.01	0	107 85 115 0

Quantifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell

Work Order: 0805051

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/8/2008 2:43:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080508A		SeqNo: 624573	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.01041	0.005	0.01	0	104 85 115 0.0107 2.75 20
Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/13/2008 12:29:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080513A		SeqNo: 625241	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	0.009153	0.0048	0.01	0	91.5 85 115 0 0
Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/13/2008 12:36:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080513A		SeqNo: 625242	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	0.009579	0.0048	0.01	0	95.8 85 115 0.009153 4.55 20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

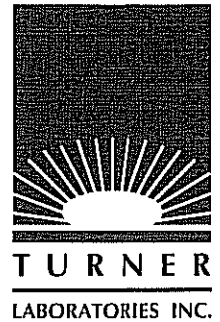
QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS-10648	Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:03:19 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080507A	PQL	SPK value	SeqNo: 623697	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	91.99	20	0	92	80 120 0
Arsenic	104.8	10	0	105	80 120 0
Lead	102.3	20	0	102	80 120 0

Sample ID: LCSD-10648	Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:07:43 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080507A	PQL	SPK value	SeqNo: 623698	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	93.23	20	0	93.2	80 120 91.99 1.35 20
Arsenic	105.2	10	0	105	80 120 104.8 0.405 20
Lead	103.7	20	0	104	80 120 102.3 1.39 20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

May 15, 2008



Keith Fritz
Brown & Caldwell
110 S. Church Street, Ste 2300
Tucson, AZ 85701
TEL: (520) 624-5744
FAX (520) 791-2738

RE: COT-Silverbell 134894

Order No.: 0805051

Dear Keith Fritz,

Turner Laboratories, Inc. received 10 samples on 5/2/2008 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

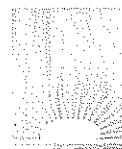
Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Shari Bauman
Laboratory Director

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Project: COT-Silverbell 134894
Lab Order: 0805051

CASE NARRATIVE

Analytical Comments for METHOD ICP_RS, SAMPLE 0805051-02 through -09: The metals concentrations may be estimates, due to the elevated iron concentration (iron is a major interferent for ICP analysis).

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-01A

Client Sample ID: COT-EB042908LW
Collection Date: 4/29/2008 8:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	ND	10		ppm/wipe	1	5/7/2008 2:21:59 PM

Qualifiers:

ND - Not Detected at or above the PQL

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-02A

Client Sample ID: COT-RF-01+03
Collection Date: 5/1/2008 1:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	47	10		mg/Kg	1	5/7/2008 2:26:20 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-03A

Client Sample ID: COT-RF-04+06
Collection Date: 5/1/2008 1:40:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:31:59 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-04A

Client Sample ID: COT-RF-03+06
Collection Date: 5/1/2008 1:45:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	5/7/2008 2:37:30 PM
Arsenic	7.9	5.0		mg/Kg	1	5/7/2008 2:37:30 PM
Lead	31	10		mg/Kg	1	5/7/2008 2:37:30 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08

CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-05A

Client Sample ID: COT-RF-06+06
Collection Date: 5/1/2008 1:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B		Analyst: RAD		
Antimony	ND	10		mg/Kg	1	5/7/2008 1:34:09 PM
Arsenic	7.1	5.0		mg/Kg	1	5/7/2008 1:34:09 PM
Lead	21	10		mg/Kg	1	5/7/2008 1:34:09 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-06A

Client Sample ID: COT-RF-05+06
Collection Date: 5/1/2008 4:30:00 PM

Matrix: SOIL

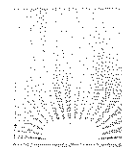
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:42:15 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-07A

Client Sample ID: COT-RF-07+06
Collection Date: 5/1/2008 2:45:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	5/7/2008 2:47:48 PM
Arsenic	7.5	5.0		mg/Kg	1	5/7/2008 2:47:48 PM
Lead	63	10		mg/Kg	1	5/7/2008 2:47:48 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-08A

Client Sample ID: COT-RF-12+03
Collection Date: 5/1/2008 4:25:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Lead	22	10		mg/Kg	1	5/7/2008 2:53:20 PM

Qualifiers:

ND - Not Detected at or above the PQL

I - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit

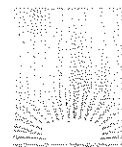
S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-09A

Client Sample ID: COT-DUP06
Collection Date: 5/1/2008 12:00:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS-RCRA, TOTAL		SW6010B				Analyst: RAD
Antimony	ND	10		mg/Kg	1	5/7/2008 2:58:43 PM
Arsenic	7.8	5.0		mg/Kg	1	5/7/2008 2:58:43 PM
Lead	37	10		mg/Kg	1	5/7/2008 2:58:43 PM

Qualifiers: ND - Not Detected at or above the PQL
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Turner Laboratories, Inc.

Date: 15-May-08



CLIENT: Brown & Caldwell
Lab Order: 0805051
Project: COT-Silverbell 134894
Lab ID: 0805051-10A

Client Sample ID: EB0502085
Collection Date: 5/2/2008 9:50:00 AM

Matrix: GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP (TOTAL) METALS						
		E200.7				Analyst: RAD
Copper	ND	0.020		mg/L	1	5/8/2008 5:44:18 PM
GFAA METALS IN WATER						
		E200.9				Analyst: RAD
Antimony	ND	0.0048		mg/L	1	5/13/2008 1:47:00 PM
Arsenic	ND	0.0050		mg/L	1	5/8/2008 5:42:00 PM
Arsenic	ND	0.0050		mg/L	1	5/6/2008 5:23:00 PM
Lead	ND	0.0050		mg/L	1	5/7/2008 3:09:00 PM
Selenium	ND	0.0050		mg/L	1	5/9/2008 2:46:00 PM
Thallium	ND	0.0016		mg/L	1	5/14/2008 1:13:00 PM

Qualifiers: ND - Not Detected at or above the PQL
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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

TURNER LABORATORIES, INC.

SAMPLE CONTROL RECEIPT CHECKLIST



Turner Laboratories W.O. #: 0805051

Received By: DW

Received Date/Time: 5-2-08 11:35

Delivered by: Client

1. Shipping container/cooler in good condition? ☒ Yes ☐ No ☐ Not Present
2. Custody seals intact on sample bottles? ☐ Yes ☐ No ☒ Not Present
3. Chain of custody present? ☒ Yes ☐ No
4. COC signed when relinquished and received? ☒ Yes ☐ No
5. COC agrees with sample labels? ☒ Yes ☐ No
6. Samples in proper container/bottle? ☒ Yes ☐ No
7. Sample container intact? ☒ Yes ☐ No
8. Sufficient sample volume for requested tests? ☒ Yes ☐ No
9. Samples received within holding times? ☒ Yes ☐ No
10. VOA vials received with no headspace? ☐ Yes ☐ No ☒ No Vials
11. Bacti bottles received with appropriate headspace? ☐ Yes ☐ Above 100ml
☒ Not Applicable ☐ Below 100ml
12. Temperature upon receipt? 1
13. Number of sample containers received? 10

Additional Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

TURNER WORK ORDER # 0805051 DATE 5-1-2008 PAGE 1 OF 1

PROJECT NAME <u>COT-SILVERBELL</u> # <u>134894</u> CONTACT NAME <u>KEITH FRITZ</u> COMPANY NAME <u>BROWN & CALDWELL</u> ADDRESS <u>110 S Church Ave Ste 2300</u> <u>Tucson 85701</u> PHONE <u>624-5744</u> SAMPLER'S SIGNATURE <u>Mike Mahal</u>				NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>SAMPLE I.D.</th> <th>DATE</th> <th>TIME</th> <th>LAB I.D.</th> <th>SAMPLE MATRIX*</th> </tr> </thead> <tbody> <tr> <td>COT-EB042908L</td> <td>4-21-08</td> <td>0815</td> <td></td> <td>WIPE</td> </tr> <tr> <td>COT-RF-01+03</td> <td>5-1-08</td> <td>1330</td> <td></td> <td>SL</td> </tr> <tr> <td>COT-RF-04+06</td> <td></td> <td>1340</td> <td></td> <td></td> </tr> <tr> <td>COT-RF-03+06</td> <td></td> <td>1345</td> <td></td> <td></td> </tr> <tr> <td>COT-RF-06+06</td> <td></td> <td>1350</td> <td></td> <td></td> </tr> <tr> <td>COT-RF-05+06</td> <td></td> <td>1630</td> <td></td> <td></td> </tr> <tr> <td>COT-RF-07+06</td> <td></td> <td>1445</td> <td></td> <td></td> </tr> <tr> <td>COT-RF-12+03</td> <td></td> <td>1625</td> <td></td> <td></td> </tr> <tr> <td>COT-DUP06</td> <td></td> <td>1200</td> <td></td> <td></td> </tr> <tr> <td>EB050209S</td> <td>5-2-08</td> <td>0950</td> <td></td> <td>WJ</td> </tr> </tbody> </table>				SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	COT-EB042908L	4-21-08	0815		WIPE	COT-RF-01+03	5-1-08	1330		SL	COT-RF-04+06		1340			COT-RF-03+06		1345			COT-RF-06+06		1350			COT-RF-05+06		1630			COT-RF-07+06		1445			COT-RF-12+03		1625			COT-DUP06		1200			EB050209S	5-2-08	0950		WJ	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2"> <input type="checkbox"/> Acids <input type="checkbox"/> Volatile Organics 625/0270 <input type="checkbox"/> Base Neutrals </td> <td colspan="2"> <input type="checkbox"/> TTHMS <input type="checkbox"/> 634/524.2/0260 </td> <td colspan="2"> <input type="checkbox"/> HAA5 <input type="checkbox"/> Pesticides 8081 <input type="checkbox"/> Total Petroleum Hydrocarbons IR(0015A2) 1664A <input type="checkbox"/> PCBs 8082 </td> <td colspan="2"> <input type="checkbox"/> Oil and Grease Cray. 1664A <input type="checkbox"/> VOA Analysis <input type="checkbox"/> Sem-VOA <input type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Priority Pollutants <input type="checkbox"/> Total </td> <td colspan="2"> <input type="checkbox"/> Cyanide <input type="checkbox"/> Amen. <input type="checkbox"/> WAD <input type="checkbox"/> SECONDARY <input type="checkbox"/> Coliform <input type="checkbox"/> Colien </td> <td colspan="2"> <input type="checkbox"/> pH <input type="checkbox"/> COD <input type="checkbox"/> TSS <input type="checkbox"/> BOD </td> <td colspan="2"> <input type="checkbox"/> Total P6 <input type="checkbox"/> Total S6, As <input type="checkbox"/> Total Cu </td> </tr> </table>														<input type="checkbox"/> Acids <input type="checkbox"/> Volatile Organics 625/0270 <input type="checkbox"/> Base Neutrals		<input type="checkbox"/> TTHMS <input type="checkbox"/> 634/524.2/0260		<input type="checkbox"/> HAA5 <input type="checkbox"/> Pesticides 8081 <input type="checkbox"/> Total Petroleum Hydrocarbons IR(0015A2) 1664A <input type="checkbox"/> PCBs 8082		<input type="checkbox"/> Oil and Grease Cray. 1664A <input type="checkbox"/> VOA Analysis <input type="checkbox"/> Sem-VOA <input type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Priority Pollutants <input type="checkbox"/> Total		<input type="checkbox"/> Cyanide <input type="checkbox"/> Amen. <input type="checkbox"/> WAD <input type="checkbox"/> SECONDARY <input type="checkbox"/> Coliform <input type="checkbox"/> Colien		<input type="checkbox"/> pH <input type="checkbox"/> COD <input type="checkbox"/> TSS <input type="checkbox"/> BOD		<input type="checkbox"/> Total P6 <input type="checkbox"/> Total S6, As <input type="checkbox"/> Total Cu	
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<input type="checkbox"/> Acids <input type="checkbox"/> Volatile Organics 625/0270 <input type="checkbox"/> Base Neutrals		<input type="checkbox"/> TTHMS <input type="checkbox"/> 634/524.2/0260		<input type="checkbox"/> HAA5 <input type="checkbox"/> Pesticides 8081 <input type="checkbox"/> Total Petroleum Hydrocarbons IR(0015A2) 1664A <input type="checkbox"/> PCBs 8082		<input type="checkbox"/> Oil and Grease Cray. 1664A <input type="checkbox"/> VOA Analysis <input type="checkbox"/> Sem-VOA <input type="checkbox"/> TCLP Metals <input type="checkbox"/> TCLP Priority Pollutants <input type="checkbox"/> Total		<input type="checkbox"/> Cyanide <input type="checkbox"/> Amen. <input type="checkbox"/> WAD <input type="checkbox"/> SECONDARY <input type="checkbox"/> Coliform <input type="checkbox"/> Colien		<input type="checkbox"/> pH <input type="checkbox"/> COD <input type="checkbox"/> TSS <input type="checkbox"/> BOD		<input type="checkbox"/> Total P6 <input type="checkbox"/> Total S6, As <input type="checkbox"/> Total Cu																																																																										
1. RELINQUISHED BY: <u>Mike Mahal</u> Signature <u>Michelle Mahal</u> Printed Name <u>Brown & Caldwell</u> Firm <u>5-2-08 1135</u> Date/Time					2. RECEIVED BY: <u>Michelle Mahal</u> Signature Printed Name Firm Date/Time					TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days)* Next Day _____ 2 Day _____ 5 Day _____ Fax Preliminary Results Requested Report Date _____ * Working Days					REPORT REQUIREMENTS: I. Routine Report <input checked="" type="checkbox"/> II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (includes All Raw Data) Add 10% to invoice					INVOICE INFORMATION: Account _____ Y _____ N P.O. # _____ Bill to: _____ Total Containers <u>10</u> Temperature _____ <input checked="" type="checkbox"/> wgt ice <input type="checkbox"/> Blue Ice					SAMPLE RECEIPT:																																																													
3. RELINQUISHED BY: <u>Michelle Mahal</u> Signature Printed Name Firm Date/Time					4. RECEIVED BY: <u>Michelle Mahal</u> Signature Printed Name Firm Date/Time					SPECIAL INSTRUCTIONS/COMMENTS: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Compliance Analysis:</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>ADEQ Forms:</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Mail ADEQ Forms:</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> </table> <p>* LEGEND ST = STORMWATER SL = SOIL SD = SOLID SG = SLUDGE WW = WASTEWATER GW = GROUNDWATER DW = DRINKING WATER</p>										Compliance Analysis:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	ADEQ Forms:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Mail ADEQ Forms:	<input type="checkbox"/> Yes	<input type="checkbox"/> No																																																										
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TURNER LABORATORIES, INC.

QC SUMMARY REPORT

LEVEL II

Turner Work Order No.: 0805051

Client: Brown and Caldwell

Project: COT-Silverbell 134894

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell

Work Order: 0805051

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:22:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: ICP_080508A		SeqNo: 624715	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cadmium	ND	0.003			
Chromium	ND	0.03			
Copper	ND	0.02			

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/6/2008 1:03:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080506A SeqNo: 623485

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic ND 0.005

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/7/2008 11:18:00 AM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080507A SeqNo: 624248

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead ND 0.005

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/8/2008 2:30:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080508A SeqNo: 624571

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic ND 0.005

Sample ID: MB-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/13/2008 12:22:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080513A SeqNo: 625240

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony ND 0.0048

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT

Method Blank

Sample ID: MB-10648 **Batch ID:** 10648 **Test Code:** SW6010B **Units:** mg/Kg **Analysis Date:** 5/7/2008 12:59:05 PM **Prep Date:** 5/5/2008
Client ID: **Run ID:** ICP_080507A **SeqNo:** 623696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	20									
Arsenic	ND	10									
Lead	ND	20									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits



Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell
 Work Order: 0805051
 Project: COT-Silverbell 134894

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0805050-01AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:21:24 PM		Prep Date: 5/5/2008	
Client ID:		Run ID:	ICP_080507A		SeqNo: 623700			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Lead	142.5	10	50	105.9	73.2	75	125	0
								Qual
								S

Sample ID: 0805050-01AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:25:39 PM		Prep Date: 5/5/2008	
Client ID:		Run ID:	ICP_080507A		SeqNo: 623701			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Lead	152.2	10	50	105.9	92.6	75	125	142.5
								Qual
								20

Sample ID: 0805051-05AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:39:52 PM		Prep Date: 5/5/2008	
Client ID: COT-RF-06+06		Run ID:	ICP_080507A		SeqNo: 623703			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony	11.08	10	50	0	22.2	75	125	0
Arsenic	47.7	5	50	7.117	81.2	75	125	0
Lead	55.43	10	50	21.15	68.6	75	125	0
								Qual
								S

Sample ID: 0805051-05AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:44:49 PM		Prep Date: 5/5/2008	
Client ID: COT-RF-06+06		Run ID:	ICP_080507A		SeqNo: 623704			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony	11.67	10	50	0	23.3	75	125	11.08
Arsenic	48.28	5	50	7.117	82.3	75	125	47.7
Lead	58.62	10	50	21.15	74.9	75	125	55.43
								Qual
								S

Sample ID: 0805051-05AMS		Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:44:49 PM		Prep Date: 5/5/2008	
Client ID: COT-RF-06+06		Run ID:	ICP_080507A		SeqNo: 623704			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Antimony	11.67	10	50	0	23.3	75	125	11.08
Arsenic	48.28	5	50	7.117	82.3	75	125	47.7
Lead	58.62	10	50	21.15	74.9	75	125	55.43
								Qual
								S

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

Turner Laboratories, Inc.

Date: 27-May-08

CLIENT: Brown & Caldwell

Work Order: 0805051

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:26:00 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080508A	PQL	SPK value	SeqNo: 624716	
Analyte	Result			LowLimit	HighLimit
Cadmium	0.04448	0.003	0.05	85	115
Chromium	0.1872	0.03	0.2	85	115
Copper	0.2751	0.02	0.25	85	115
				%REC	RPD Ref Val
					%RPD
					RPDLimit
					Qual

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.7	Units: mg/L	Analysis Date: 5/8/2008 2:31:00 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080508A	PQL	SPK value	SeqNo: 624717	
Analyte	Result			LowLimit	HighLimit
Cadmium	0.04425	0.003	0.05	85	115
Chromium	0.1865	0.03	0.2	85	115
Copper	0.2737	0.02	0.25	85	115
				%REC	RPD Ref Val
					%RPD
					RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
 Work Order: 0805051
 Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/6/2008 1:10:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080506A		SeqNo: 623486	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.009737	0.005	0.01	0	97.4 85 115 0

Sample ID: LCSD-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/6/2008 1:16:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080506A		SeqNo: 623487	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.009712	0.005	0.01	0	97.1 85 115 0.009737 0.257 20

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/7/2008 11:39:00 AM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080507A		SeqNo: 624249	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	0.01032	0.005	0.01	0	103 85 115 0

Sample ID: LCSD-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/7/2008 11:46:00 AM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080507A		SeqNo: 624250	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Lead	0.0103	0.005	0.01	0	103 85 115 0.01032 0.194 20

Sample ID: LCS-10645	Batch ID: 10645	Test Code: E200.9	Units: mg/L	Analysis Date: 5/8/2008 2:37:00 PM	Prep Date: 5/5/2008
Client ID:		Run ID: GFAA_SIMAA_080508A		SeqNo: 624572	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	0.0107	0.005	0.01	0	107 85 115 0

Quantifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell

Work Order: 0805051

Project: COT-Silverbell 134894

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCS-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/8/2008 2:43:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080508A SeqNo: 624573

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.01041	0.005	0.01	0	104	85	115	0.0107	2.75	20	

Sample ID: LCS-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/13/2008 12:29:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080513A SeqNo: 625241

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.009153	0.0048	0.01	0	91.5	85	115	0			*

Sample ID: LCS-10645 Batch ID: 10645 Test Code: E200.9 Units: mg/L Analysis Date: 5/13/2008 12:36:00 PM Prep Date: 5/5/2008

Client ID: Run ID: GFAA_SIMAA_080513A SeqNo: 625242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.009579	0.0048	0.01	0	95.8	85	115	0.009153	4.55	20	*

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Brown & Caldwell
Work Order: 0805051
Project: COT-Silverbell 134894

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS-10648	Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:03:19 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080507A	PQL	SPK value	SeqNo: 623697	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	91.99	20	0	92	80 120 0
Arsenic	104.8	10	0	105	80 120 0
Lead	102.3	20	0	102	80 120 0

Sample ID: LCSD-10648	Batch ID: 10648	Test Code: SW6010B	Units: mg/Kg	Analysis Date: 5/7/2008 1:07:43 PM	Prep Date: 5/5/2008
Client ID:	Run ID: ICP_080507A	PQL	SPK value	SeqNo: 623698	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Antimony	93.23	20	0	93.2	80 120 91.99 1.35 20
Arsenic	105.2	10	0	105	80 120 104.8 0.405 20
Lead	103.7	20	0	104	80 120 102.3 1.39 20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

APPENDIX D

Work Plan

WORK PLAN
SILVERBELL FIRING RANGE
OPERATIONS AND MAINTENANCE

Prepared for
City of Tucson, Environmental
Services
March 25, 2008

WORK PLAN
SILVERBELL FIRING RANGE OPERATIONS AND MAINTENANCE
TUCSON, ARIZONA

Prepared for
City of Tucson, Environmental Services
100 N Stone Avenue, 2nd Floor
Tucson, Arizona 85701

March 25, 2008

Brown and Caldwell Project #: 134894

BROWN AND CALDWELL

110 S. Church Avenue, Suite 2300
Tucson, Arizona, 85701

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Figure 2 Site Map

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Table 1. Sampling Protocol

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Appendix A Site Health and Safety Plan

Appendix B Air Monitoring Plan

LIST OF ACRONYMS

A.R.S.	Arizona Revised Statutes
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
AZPDES	Arizona Pollutant Discharge Elimination System
BCC	Brown and Caldwell Constructors
COC	Contaminants of concern
CY	Cubic yards
LCS	Laboratory control sample
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MS/MSD	Matrix spike/matrix spike duplicate
MT ²	Metals Treatment Technologies
NOI	Notice of Intent
NOT	Notice of Termination
O&M	Operation and Maintenance
QA/QC	Quality assurance/quality control
PQL	Practical quantitation limits
RCRA	Resource Conservation and Recovery Act
RPD	Relative percent difference
rSRL	Residential soil remediation level
SRL	Soil remediation level
SSHP	Site Safety and Health Plan
SWPPP	Storm Water Pollution Prevention Plan
TC	Toxicity characteristic
TCLP	Toxicity characteristic leaching procedure
USEPA	United States Environmental Protection Agency
WP	Work Plan

1. INTRODUCTION

This Work Plan (WP) describes the procedures to be implemented during the operation and maintenance (O&M) activities at the Silverbell Firing Range (Site). The Site is located at 3200 North Silverbell Road in Tucson, Arizona (Figure 1). The City of Tucson retained Brown and Caldwell Constructors (BCC) to remove soil impacted with metals associated with the shooting range. Brown and Caldwell Constructors has contracted Metals Treatment Technologies (MT2) to perform soil excavation, metal separation and recycling, soil stabilization, treatment confirmation analyses, waste transportation and disposal, and site restoration as part of range operations and maintenance functions. This WP provides details for the activities including implementation of soil and air sampling procedures, documentation of maintenance activities, and preparation of a final report.

1.1 Site Description and Project Background

The City of Tucson (City) has owned the property since 1930, and originally contained a wastewater treatment plant. In 1953, the City closed and converted part of the wastewater plant into an armory. The target storage and tower for the firing range were erected in 1954. The shooting range has remained relatively unchanged. However, a backstop systems consisting of metal plates and a conveyor were removed in 1990.

A lead reclamation event was conducted in mid-1990 (after conveyor system disassembly) in which the soil backstop was excavated and screened. The shooting lanes and range floor were also screened for metals removal. The reclamation event resulted in 24 tons of projectiles and screened soil, which were sold to a smelter. No lead reclamation has occurred since. A soil berm currently acts as a backstop.

The area of the shooting range is approximately 200 feet (ft) by 150 ft. The northern half of the shooting range is covered by a shade structure standing approximately 15 ft high. The two berms (primary and secondary) are located directly to the north of the shooting range. The primary berm extends from the base of the shooting range to approximately 20 ft. high. The secondary berm located north of the primary berm extending from its top, is approximately 30 ft. wide by 300 ft. long and 20 ft. high. The armory is located in the southeast corner of the shooting range.

1.2 Project Objectives

The objectives of the O&M project are:

- Conduct baseline soil sampling of the range floor and the primary and secondary impact berms.
- Reclaim metals from on-site soils and remove soils with elevated concentrations of lead and other metals to minimize risk to human health and impacts to the environment.
- Evaluate the armory building surfaces for elevated lead concentrations.
- Minimize environmental restrictions to potential future redevelopment of the property.

1.3 Scope of Work

The scope of work of the O&M activities includes the implementation of the following tasks:

- Utility clearance for all areas where excavation may occur;
- Coordination and participation in City's preconstruction meetings;

- Collect baseline samples and perform exploratory excavations to evaluate the basal soil within the secondary berm;
- Delineate impacted areas and perform excavation, treatment and disposal operations;
- Conduct soil confirmation sampling after maintenance activities are complete to confirm that the concentration of remaining metals are below their respective residential soil remediation levels (rSRLs); and,
- Collect wipe samples from armory building surfaces.

2. OPERATION AND MAINTENANCE ACTIVITIES

To accomplish the project objectives, BCC will implement the O & M scope of work activities listed in Section 1.3. The following sections describe each activity.

2.1 Baseline Soil Sampling

After all areas are cleared for utilities, baseline sampling will be conducted within the range floor, the primary and secondary berms.

Brown and Caldwell Constructors will subdivide the range floor into four quadrants: northeast (NE), southeast (SE), southwest (SW) and northwest (NW). BCC will collect and analyze a composite soil sample from each quadrant of the range floor. Each sample will be composited from four subsamples to be collected from a depth of 2 to 4 inches below the existing soil surface of each quadrant. The four composite samples will be analyzed for total lead.

The primary berm will be subdivided into five 40-foot long sections: west (W), west-central (WC), central (C), east-central (EC), and east (E). BCC will collect a composite sample from each section. Each sample will be composited from four subsamples collected at a spacing of every 10 feet. The subsamples will be collected using a pick hammer and/or trowel from a depth of 12 to 18 inches beneath the berm surface. The five composite samples will be analyzed for total lead.

Similarly, the secondary berm will also be subdivided into five 60-foot long sections. BCC will collect a composite sample from each section. Each sample will be composited from four subsamples collected at a spacing of every 12 feet. The subsamples will be collected using a pick hammer and/or trowel from a depth of 12 to 18 inches beneath the berm surface. The five composite samples will be analyzed for total lead.

Additionally, two samples from each set of the range floor, primary berm, and secondary berm will be analyzed for total antimony, arsenic, and copper.

To characterize the basal soil within the secondary berm, BCC will direct MT2 to excavate three trenches along the width (cross-section) of the secondary berm. Two of the trenches will be completed at locations coincident with the outer edges of the primary berm, with a third trench to occur in the middle of the secondary berm. BCC will collect a total of nine composite samples to evaluate the basal layer of the secondary berm. From each of the trench locations one composite sample will be collected from 6 to 12 inches from the base of the berm; one from 18 to 24 inches from the base of the berm; and one from 30 to 36 inches from the base of the berm. For each trench, three samples will be collected from each depth and composited into one sample. All samples will be analyzed for total lead, antimony, arsenic and copper. The samples will be requested for 24-hour turnaround from Turner Laboratories. Additional sampling may be required if initial results do not adequately delineate the boundaries of impacted soil.

The analytical results obtained from the baseline samples will be evaluated to delineate areas of the Site containing lead and/or other metal concentrations in soil above their respective rSRLs. Lead is identified as the primary contaminant of concern (COC), since it typically comprises approximately 85% of the mass of projectiles. Other metals, such as antimony, arsenic, copper, tin and zinc, are also associated with small arms ammunition; however, the rSRL for tin and zinc are sufficiently high to eliminate these metals as contaminants of concern. The rSRLs for lead, antimony, arsenic and copper are 400 milligram per kilogram (mg/Kg), 31 mg/Kg, 10 mg/Kg, and 3,100 mg/Kg, respectively.

2.2 Maintenance Operations

Based on the results of the baseline sampling, BCC will direct MT2 to excavate, stockpile, treat as necessary, transport and dispose of all soil areas identified as containing concentration of metals above their respective rSRLs. Prior to removal actions, BCC and/or MT2 will obtain all applicable permits, and submit all necessary documents to the State or local authorities. This will include acquiring a permit and connection for potable water that may be necessary for dust control.

MT2 will decontaminate all equipment prior to arrival on-site and prior to performing the initial excavation. Any steam cleaning water and soil debris will be collected in a temporary decontamination pad constructed or provided on-site.

BCC estimates that approximately 500 cubic yards (CY) of impacted soil will require excavation from the range floor and the primary berm. From the secondary berm, approximately 5,000 CY of overburden soil will require removal to allow excavation of the impacted soil horizon at the base of the berm. The overburden soil will be stockpiled separately from the impacted soil horizon. BCC estimates that approximately 500 CY of impacted soil will require excavation from the base of the secondary berm.

Following excavation of impacted soils, BCC will collect confirmation samples from the newly exposed surfaces to confirm that the excavation has removed all impacted soil. Based on the excavation confirmation sampling results, additional impacted areas may be excavated.

The estimated 1,000 CY of impacted soil will be screened and subjected to fragment recovery for metal reclamation. The screened impacted soil will then be treated to stabilize the leachability of metals and render the material non-hazardous.

2.3 Treatment Process

The method of treatment for the impacted soil is chemical stabilization. The reagent used to remediate the lead impacted soil is EcoBond®, which is a phosphate-based stabilizing agent that chemically bonds with the lead and other metals when mixed with the soil. MT2 will perform the soil treatment and BCC personnel will perform treatment confirmation sampling. The treatment goal is the Resource Conservation and Recovery Act (RCRA) Toxicity Characteristic (TC) limit for various metals (e.g., 5.0 milligrams per liter [mg/L] for lead) that are present in the soil. Based on previous, similar remediation projects by MT2, maintenance requirements are driven by the presence of lead; other metals are present in lesser concentrations and are nonetheless stabilized by contact with EcoBond®.

The EcoBond® will be delivered by trucks and placed on the treatment area in small, manageable piles. Treatment will be performed in approximately 12- to 18-inch lifts. EcoBond® pellets will be dispersed over the surface of the area to be treated, mixed into the soil using an excavator or dozer with rippers, and further mixed with a front-end loader to ensure adequate dispersion. A water truck will be on hand to spray the area during mixing to keep fugitive dust emissions to a minimum. The addition of water also expedites the bonding process.

Following mixing, the treated material will be placed in 100 CY stockpiles, and a five-point composite confirmation sample will be collected from each 100-CY treated stockpile. The treatment confirmation samples will be submitted for analysis of Toxicity Characteristic Leaching Procedure (TCLP) lead. Once results verify the treatment goal is met (TCLP lead less than 5.0 mg/L), disposal activities can be initiated. Upon completion of the treatment and excavation process, BCC will collect confirmation soil samples from the base of the excavated soils.

2.4 Soil Confirmation Sampling

Brown and Caldwell Constructors will confirm the successful removal of lead-impacted soil with levels greater than rSRLs through confirmatory soil sampling of surfaces remaining after excavation. A total of 28 confirmation soil samples will be collected: 12 from the ranger floor (3 per quadrant); eight samples from the primary berm; and eight from the secondary berm. Each of the 28 confirmation soil samples will be analyzed for total lead. Additionally, 10 of the samples will be analyzed for total antimony, arsenic and copper.

To confirm that the approximately 5,000 CY of overburden soil from the secondary berm is not impacted by heavy metals, BCC will collect 10 composite samples (one for every 500 CY) from the stockpiled overburden soil. The 10 composite samples from the overburden of the secondary berm will be analyzed for total lead, antimony, arsenic, and copper.

2.5 Lead Wipe Samples

Associated with the soil confirmation sampling activities, BCC will also collect up to six wipe samples from inside the armory building located in the southeast corner of the range floor. All samples will be analyzed for total lead at an Arizona certified laboratory.

2.6 Dust Control

MT2 will obtain a dust control permit from Pima County Air Quality Department for earthmoving activities that will be conducted at the Site. The procedural requirements specified in the associated dust control plan will be conducted on the Site to reduce fugitive dust emissions.

2.7 Storm Water Management

Activities described in this WP involve construction-related activities regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) Program for Discharges from Construction Activities (General Permit). Accordingly, preparation and issuance of a Notice of Intent (NOI) pursuant to the project-specific General Permit is required prior to execution of the O&M activities provided in this WP. Because the proposed discharge from the O&M activities will be classified as a “Routine Discharge” under Part II.B.4 of the General Permit, the NOI must be submitted to Arizona Department of Environmental Quality (ADEQ) within two business days prior to any construction activity. A Storm Water Pollution Prevention Plan (SWPPP) will be developed for this project and will be maintained on Site. Additionally, a copy of the General Permit No. AZCON-23076, issued February 26, 2007, must be maintained in the construction field office. Upon completion of the remediation and removal of stockpiled soils, storm water controls will be removed and a notice of termination (NOT) will be provided to ADEQ.

2.8 Air Monitoring

During O&M activities, BCC will perform perimeter air monitoring and MT2 will perform worker area monitoring. The purpose of air monitoring is to identify and quantify airborne contaminants to verify the level of worker protection and evaluate potential off-site impacts. Air monitoring will be performed using air sampling pumps and particulate monitors (Mini-Ram) as summarized below:

- Baseline air monitoring, using the Mini-Ram, will be performed every morning prior to the start of O&M activities.
- Real-time measurements will be made as near as feasible to the breathing zone of workers with the greatest exposure potential in each active work area.

- Perimeter air monitoring will be performed at scheduled intervals (approximately every 30 minutes) during O&M activities using a Mini-Ram.
- Data obtained from the data-logging Mini-Ram and the analyses of the air samples will be used to establish a correlation of lead concentration to dust volume.

The potential generation of lead-containing fugitive dust emissions during O&M activities will be minimized using dust control procedures, personnel decontamination, and worker and perimeter air monitoring to verify the adequacy of control measures.

3. SAMPLING AND LABORATORY ANALYSIS

This section identifies specific requirements or procedures related to sampling equipment, sample containers, sample storage/transportation, field documentation, decontamination, and field quality assurance/quality control (QA/QC) that will be followed. These requirements are procedures are necessary to generate data of sufficient quality. U.S. Environmental Protection Agency (USEPA, 2002) notes that the quality of data is a function of (1) the appropriateness and accuracy of the sample collection and handling method; (2) the quality and the appropriateness of the laboratory analysis; and (3) the representativeness of the data with respect to the object of the study. These three factors will be addressed in the following manner:

- The appropriateness and accuracy of the sample collection and handling methods have been addressed by the incorporation of methods that are consistent with state and federal guidance. The methods address a wide range of issues, including steps required to collect uncontaminated samples, to preserve samples, to maintain chain-of-custody documentation, and to ensure that samples are analyzed within specified holding times.
- The quality and appropriateness of laboratory analysis have been addressed by the incorporation of approved analytical methods and appropriate data validation procedures. Consistent with the needs relative to the quality and appropriateness of the analysis, the WP reflects the level of analysis commensurate with the purpose of the data. For analysis that will be used to support O&M decisions, regulatory methods will be employed by laboratories approved by Arizona Department of Health Services (ADHS) for the method being used, and the laboratory results will be subject to a data validation process.
- The representativeness of the data, with respect to the object of the study, is a function of the two factors discussed above and may be especially dependent on the design of the sampling program. The sampling approach described in the WP is intended to generate representative data relative to particular data objectives.

The sampling and analysis activities described in the following sections address samples collected to demonstrate that the treatment of the impacted soil is completed where the TCLP lead concentrations, at a minimum, are less than 5.0 mg/L, and to confirm that the concentration of COCs remaining in the surface soil after O&M do not exceed their respective rSRLs.

3.1 Sampling Rationale and Frequency

Treatment confirmation composite samples will be collected from each 100-CY stockpile of treated material and analyzed for TCLP lead to confirm that lead is not present at concentrations exceeding the TC criteria of 5 mg/L. Each composite sample will consist of four sub-samples collected at various locations from the stockpile. The four sub-samples will be collected at a minimum depth of 12 inches beneath the surface of the stockpile. The sample collection procedure and analytical requirements for these composite samples are provided in Section 3.2.

Confirmatory surface soil samples will be collected from the Site to demonstrate that remaining soils do not contain COCs at concentrations in excess of their respective residential SRLs. Following completion of treatment activities, these samples will be collected from the range floor, primary berm, and secondary berm.

3.2 Soil Sample Collection Procedure

3.2.1 Baseline Sampling

Baseline composite samples from the range floor, primary and secondary berms will be collected using the following procedures:

- Prior to sampling, new nitrile gloves will be worn to prevent cross-contamination.
- Each sub-sample will be collected from the specified locations of the range floor, primary and secondary berms, using a disposable polyethylene scoop or similar.
- A laboratory-supplied 4-ounce glass jar will be filled with soil material from each sub-sample location. The soil will then be placed into a clean 1-gallon plastic sealable bag.
- Soil from each sub-sample will be thoroughly mixed to generate a homogenized material. The 4-ounce glass jar will then be filled with the homogenized material to comprise the composite sample.
- Each sample container will be properly labeled, logged onto chain-of-custody and field sampling forms, placed in sealable plastic bags, and stored with ice in an insulated container maintained at 4 degrees Celsius (°C) until submitted to the laboratory for analyses.

Specific identification to be used for the samples will conform to the following naming convention:

For baseline composite samples collected from each quadrant of the range floor, the sample identification will be **COT-BRF-SW/NW/NE/SE**, where COT stands for City of Tucson, BRF refers to baseline sample from range floor, and SW/NW/NE/SE is a two letter designation of the quadrant where the sample was collected.

For baseline composite samples collected from the primary berm, the sample identification will be **COT-BPB-E/EC/C/WC/W**, where COT stands for City of Tucson, BPB refers to baseline sample from primary berm, and E/EC/C/WC/W is a two letter designation of the segment of the berm where the composite sample was collected.

For baseline composite samples collected from the near surface of the secondary berm, the sample identification will be **COT-BSB-NS-E/EC/C/WC/W**, where BSB refers to baseline sample from the secondary berm, NS refers to near surface, and E/EC/C/WC/W is a two letter designation of the segment of the berm where the composite sample was collected.

For baseline composite samples collected from the basal soil of the secondary berm, the sample identification will be **COT-BSB-BS-W/C/E-##**, where BS refers to basal soil, W/C/E refers to the trench from which the composite sample was collected (west, central or east), and ## refers to the depth in inches at which the sample was collected.

Dates and times of collection for each sample will be noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample will be recorded in the field notes, as applicable.

The baseline composite samples will be analyzed for total lead and/or antimony, arsenic and copper, using USEPA Test Method 6010B.

3.2.2 Treatment Confirmation Sampling

Treatment confirmation composite samples will be collected from each 100-CY stockpile of treated material using the following procedures:

- Prior to sampling, new nitrile gloves will be worn to sample each treated stockpile, to prevent cross-contamination.
- A total of four sub-samples will be collected from various locations of the stockpile at a depth of 12 inches, using a disposable polyethylene scoop or similar.
- A laboratory-supplied 4-ounce glass jar will be filled with soil material from each sub-sample location. The soil will then be placed into a clean 1-gallon plastic sealable bag.
- Soil from each sub-sample will be thoroughly mixed to generate a homogenized material. The 4-ounce glass jar will then be filled with the homogenized material to comprise the composite sample.
- Each sample container will be properly labeled, logged onto chain-of-custody and field sampling forms, placed in sealable plastic bags, and stored with ice in an insulated container maintained at 4 °C until submitted to the laboratory for analyses.

Specific identification to be used for the samples will conform to the following naming convention: **COT-TSP#-MMDD-##**, in sequential order for each stockpile sampled where TSP# stands for “Treated Stockpile number,” MM is the two-digit month, DD is the two-digit day, and ## is the sequential number of the sample collected.

Dates and times of collection for each sample will be noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample will be recorded in the field notes, as applicable.

Treated stockpile composite samples will be analyzed for TCLP lead using USEPA Test Methods 1311 and 6010B.

3.2.3 Surface Soil Confirmation Sampling

Surface soil confirmation samples will be collected using the following procedures:

- Prior to sampling, new disposable nitrile gloves will be worn at each new sampling location to prevent cross-contamination.
- Confirmation samples will be collected from a depth of 0 to 3 inches using disposable polyethylene scoops.
- Using the sampling tool, the top layer of topsoil, vegetation, roots, pebbles, and/or debris will be removed from the sampling area.
- A laboratory-provided 4-ounce glass jar will then be filled with soil material from each sample location.
- Each sample container will be properly labeled, logged onto a chain-of-custody and field sampling forms, placed in sealable bags, and stored with ice in an insulated container maintained at 4 °C until submitted to a laboratory for analyses.

The naming convention will be:

COT-RF/PB/SB-##, where COT stands for City of Tucson, followed by the appropriate two letter location designation (RF for range floor, PB for primary berm, and SB for secondary berm), followed by the numeric identification for each sample location.

The dates and times of collection for each sample will also be noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample will be recorded in the field notes, as applicable.

The soil confirmation samples will be analyzed for total lead and/or arsenic, antimony, and copper by USEPA Test Method 6010.

3.2.4 Overburden Stockpile Confirmation Sampling

Overburden stockpile confirmation composite samples will be collected for every 500-CY of material using the following procedures:

- Prior to sampling, new nitrile gloves will be worn to sample each treated stockpile, to prevent cross-contamination.
- A total of four sub-samples will be collected from various locations of each 500-CY stockpile at a depth of 12 inches, using a disposable polyethylene scoop or similar.
- A laboratory-supplied 4-ounce glass jar will be filled with soil material from each sub-sample location. The soil will then be placed into a clean 1-gallon plastic sealable bag.
- Soil from each sub-sample will be thoroughly mixed to generate a homogenized material. The 4-ounce glass jar will then be filled with the homogenized material to comprise the composite sample.
- Each sample container will be properly labeled, logged onto chain-of-custody and field sampling forms, placed in sealable plastic bags, and stored with ice in an insulated container maintained at 4 °C until submitted to the laboratory for analyses.

Specific identification to be used for the samples will conform to the following naming convention: **COT-OSP#-MMDD-##**, in sequential order for each stockpile sampled where OSP# stands for “Overburden Stockpile number,” MM is the two-digit month, DD is the two-digit day, and ## is the sequential number of the sample collected.

Dates and times of collection for each sample will be noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample will be recorded in the field notes, as applicable.

The overburden stockpile confirmation samples will be analyzed for total lead, antimony, arsenic and copper using USEPA Test Method 6010.

3.2.5 Lead Wipe Sampling

BCC will collect a total of six lead wipe samples from the armory building using a sampling gauze and a 10 centimeter-square (cm²) template using the following procedure:

- Sample location will be identified randomly from the interior of the building.
- The template will be placed flat against the surface at the selected sample location.
- The gauze will be used to wipe the area on the surface exposed by the template in ascending horizontal strokes.
- The gauze will then be placed in a 4 ounce glass jar and labeled. The sample will then be stored in a sealable plastic bag, and stored with ice in an insulated container maintained at 4 °C until submitted to the laboratory for analyses.
- The template will be cleaned and dried between each use.

Specific identification to be used for the samples will conform to the following naming convention: **COT-AB-MMDD-##**, in sequential order for each random location sampled where AB stands for “Armory Building,” MM is the two-digit month, DD is the two-digit day, and ## is the sequential number of the sample collected.

Dates and times of collection for each sample will be noted on the container label, the field notes, and the chain-of-custody. The required documentation of each sample will be recorded in the field notes, as applicable. Samples will be submitted to the laboratory for analysis of total lead using USEPA Test Method 6010.

3.3 Quality Assurance/Quality Control

Field QA/QC samples to be collected during the project will consist of duplicate samples to assess laboratory precision. Duplicate samples will be collected at a frequency of one per 10 field samples collected. Duplicate samples will be collected in the same manner as original samples and will include fictitious sample identifications. The field sample log will properly identify and correlate the duplicate sample to the original. Analyses of the duplicate samples will be the same as the analyses for the primary sample.

The analytical laboratory will prepare and analyze several types of QA/QC samples, including method blanks, laboratory control samples (LCS), surrogate spike analyses, matrix spike/matrix spike duplicate (MS/MSD) samples, and check standards.

3.4 Data Verification and Validation

The verification and validation of data generated during this O&M effort will be performed in a manner that is consistent with industry standards. Upon receipt of complete and final analytical reports from the laboratory, BCC will perform review on 100 percent of the soil confirmation sample results.

At a minimum, the following activities will be performed:

- comparison of primary and field duplicate samples analytical results
- evaluation of detections in blank samples
- evaluation of matrix spike recoveries
- evaluation of laboratory control samples
- evaluation of surrogate spike analyses

The acceptance criteria to be applied during evaluation of the analytical data are provided below:

- Comparison of primary and field duplicate samples analytical results. The relative percent difference (RPD) for each analyte should be +/- 50 percent.
- Evaluation of detections in blank samples. No analytes should be detected in the method blanks at concentrations greater than their respective practical quantitation limits (PQLs).
- Evaluation of matrix spike recoveries. The recovery rate should be between 75 and 125 percent.
- Evaluation of laboratory control samples (LCS). The RPD between the LCS and the laboratory control sample duplicate (LCSD) should not exceed 20 percent.

4. COMMUNITY INVOLVEMENT PLAN

The Community Involvement Plan is intended to establish the means by which the public will be informed of project activities, as well as to provide opportunity for public comment. It is prepared to comply with the requirements of Arizona Revised Statutes (A.R.S.) § 49-176.A.2.

A general public notice will be distributed to property owners located within the Site proximity that may incur potential impacts either by dust or noise from the work area. This notice will be delivered by either direct mailing or door hangings, and will be in the form of a fact sheet containing the following information:

- Names and telephone numbers of one or more persons who may be contacted for information regarding the O&M. The names most likely to be selected include, Richard Byrd (City) and Keith Fritz (BCC).
- Descriptions of the nature of and type of environmental O & M activities described in this WP, and the anticipated schedule of field activities.

In addition to the above notice, signs will be located at one or more prominent locations along the perimeter of the Site, indicating the availability of a fact sheet and including the names and telephone numbers of persons who may be contacted for information regarding the site.

5. SITE SAFETY AND HEALTH PLAN

The Site Safety and Health Plan (SSHP) describes the emergency procedures, the potential chemical, physical, and biological hazards that could be encountered at the Site, and the recommended protective equipment and monitoring requirements to be implemented during the O & M project to ensure the health and safety of workers and the public. The SSHP is included in Appendix A.

6. SCHEDULE

The proposed O&M activities are expected to have an overall duration of approximately 2 weeks. Work will begin with mobilization commencement of O & M activities during the week of April 14, 2008. Work will begin each day at 7:00 AM. Depending upon the progress, work will stop each day at approximately 5:00 PM.

7. REFERENCES

USEPA, December 2002. *EPA Guidance for Quality Assurance Project Plans*. USEPA/QA/G-5, EPA/600/R-98/018.

APPENDIX A

Site Health and Safety Plan

Health and Safety Plan for Operations and Maintenance activities at the Silverbell Firing Range

REVISION 1 – April 7, 2008

3200 North Silverbell Road

Tucson, Arizona

March 14, 2008

BC Project Number: 134894

Prepared by:

B R O W N A N D C A L D W E L L

110 South Church Avenue, Suite 2300

Tucson, Arizona 85701

Prepared for:

City of Tucson – Environmental Services

201 North Stone Avenue, 2nd Floor

Tucson, Arizona 85701

Approval Page

This Health and Safety Plan (HASP) has been prepared and reviewed by the following Brown and Caldwell (BC) personnel for use at: City of Tucson Silverbell Firing Range (134894).


	Name	Signature	Title	Date
<i>Prepared By:</i>	Michele Mahal		Scientist I	
<i>Reviewed By:</i>	Michele Mahal		Site Safety Officer	
<i>Reviewed By:</i>	Keith Fritz		Project Manager	
<i>Reviewed By:</i>	Doug Rosco		Regional Safety Unit Manager	04-07-08
<i>Effective Dates:</i>	April 7, 2008 through April 7, 2009			

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APPENDIX A A

 Air Monitoring Form A

LIST OF APPENDICES

Appendix A Air Monitoring Form

Appendix B Site Safety Checklist

Appendix C H&S Plan Acknowledgement Form

Appendix D Daily Tailgate Meeting Form

Appendix E Incident Investigation Form

Appendix F Miscellaneous Health and Safety Information

CRITICAL PROJECT INFORMATION

Primary Known Compound of Concern: Lead, Arsenic, Antimony, Copper

Minimum Level of Respiratory Protection: ☒ Level D ☐ Level C

PPE: Hard hat, steel toe safety boots, reflective vest, safety glasses, nitrile gloves (for sample collection)

SEE SECTION 10 FOR SITE EMERGENCY CONTINGENCY PROCEDURES

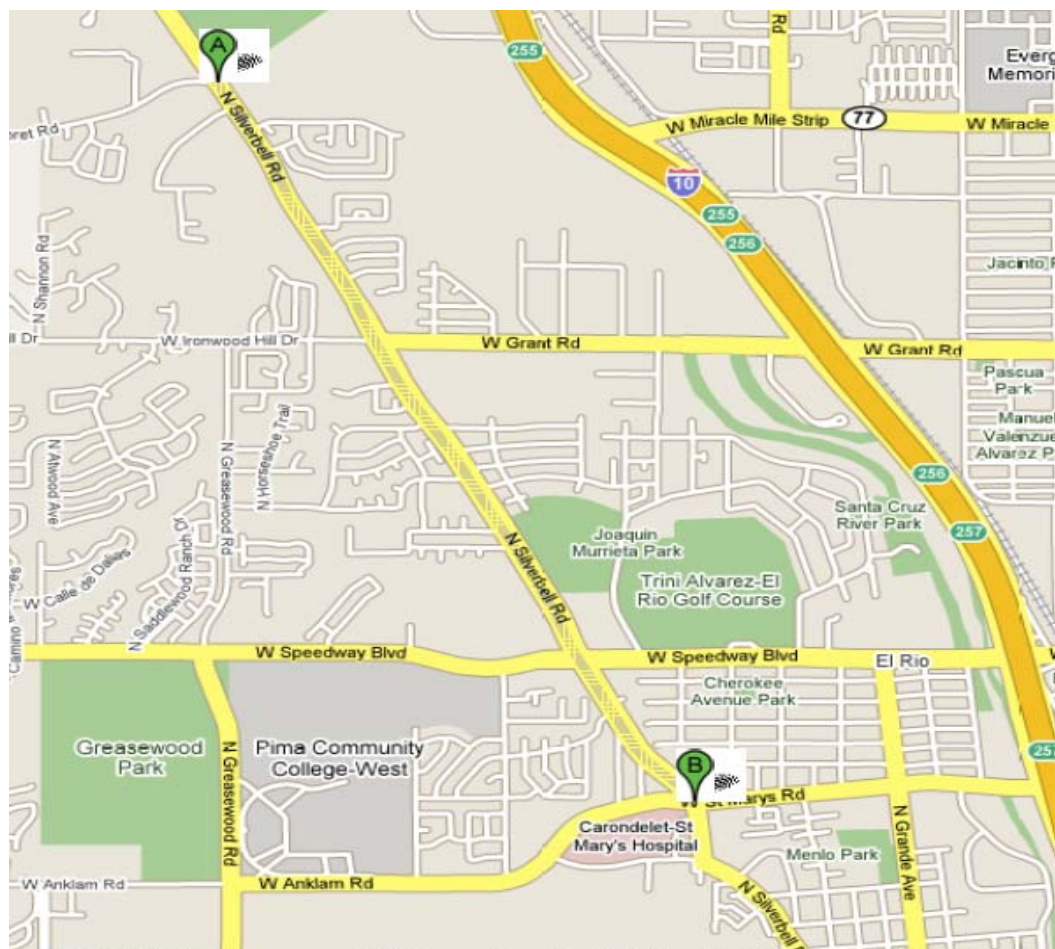
Do not endanger your own life. Survey the situation before taking any action.

BC Office Telephone	520-624-5744
Site Location Address	3200 N. Silverbell Road Tucson, Arizona

EMERGENCY PHONE NUMBERS: In the event of emergency, contact the Project Manager and/or Regional Safety Unit Manager.

Emergency Services (Ambulance, Fire, Police)	911
Poison Control	(800) 876-4766 or (800) 222-1222
Hospital Name	St. Mary's Hospital
Hospital Phone Number	(520) 872-3000
BC Project Manager (PM; Keith Fritz)	Office: 520-918-2321 Cell: 520-429-3783
BC Site Safety Officer (SSO; Michele Mahal)	Office: 520-918-2322 Cell: 520-668-4965
BC Regional Safety Unit Manager (Doug Rosco)	Office: 303-239-5410 Cell: 303-994-9675
Corporate Risk Management	Property Loss Blythe Buetzow: (925) 210-2470 Injury Angela Hernandez: (925) 210-2218
Subcontractor Contact (Mark Pokorny, MT2)	Office: 1-303-456-6977 Cell: 303-994-4948
Client Contact (Richard Byrd)	Office: 520-837-3710 Cell: 520-712-2335
OTHER CONTACT(s) Randy Bauer – BC	Office: 620-567-3560

HOSPITAL LOCATION MAP



HOSPITAL DIRECTIONS:



3200 N Silverbell Rd
Tucson, AZ 85745

Drive: 2.7 mi – about 5 mins

1. Head southeast on N Silverbell Rd toward W Goret Rd



2. Sharp right at W St Marys Rd



1601 W St Marys Rd
Tucson, AZ 85745

HOSPITAL INFORMATION:

St. Mary's Hospital
1601 W St. Marys Rd
Tucson, Arizona 85745

Phone: 520-872-3000

EMERGENCY FIRST AID PROCEDURES

THE RESPONDER SHOULD HAVE APPROPRIATE TRAINING TO ADMINISTER FIRST AID OR CPR

1. Survey the situation. Do not endanger your own life. **DO NOT ENTER A CONFINED SPACE TO RESCUE SOMEONE WHO HAS BEEN OVERCOME.** ENSURE ALL PROTOCOLS ARE FOLLOWED INCLUDING THAT A STANDBY PERSON IS PRESENT. IF APPLICABLE, REVIEW MSDSs TO EVALUATE RESPONSE ACTIONS FOR CHEMICAL EXPOSURES.
2. Call 911 (if available) or the fire department **IMMEDIATELY.** Explain the physical injury, chemical exposure, fire, or release.
3. Decontaminate the victim if it can be done without delaying life-saving procedures or causing further injury to the victim.
4. If the victim's condition appears to be non-critical, but seems to be more severe than minor cuts, he/she should be transported to the nearest hospital by the SSO or designated personnel: let the doctor assume the responsibility for determining the severity and extent of the injury. If the condition is obviously serious, contact emergency medical services (EMS) for transport or appropriate actions.

Notify the PM and Regional Safety Unit Manager immediately and complete the appropriate incident investigation reports as soon as possible.

STOP BLEEDING AND CPR GUIDELINES	
To Stop Bleeding	CPR
<ol style="list-style-type: none"> 1. Give medical statement by indicating you are trained in 1st Aid. 2. Assure: airway, breathing and circulation. 3. Use DIRECT PRESSURE over the wound with clean dressing or your hand (use non-permeable gloves). Direct pressure will control most bleeding. 4. Bleeding from an artery or several injury sites may require DIRECT PRESSURE on a PRESSURE POINT. Use pressure points for 30 -60 seconds to help control severe bleeding. 5. Continue primary care and seek medical aid as needed. 	<ol style="list-style-type: none"> 1. Give medical statement by indicating you are trained in CPR. 2. Arousal: Check for consciousness. 3. Call out for help, either call 911 yourself or instruct someone else to do so. It is very important to call for emergency assistance prior to initiating CPR. 4. Open airway with chin-lift. 5. Look, listen and feel for breathing. 6. If breathing is absent, give 2 slow, full rescue breaths. 7. Look, listen and feel for breathing. 8. If breathing is absent, initiate CPR; 30 compressions for each two breaths. 9. If an automated external defibrillator (AED) is available, use it in accordance with the AED instructions.

HEALTH AND SAFETY PLAN

1. INTRODUCTION

Brown and Caldwell (BC) has prepared this Health and Safety Plan (HASP) for use during the operations and maintenance (O & M) activities to be conducted at the City of Tucson Silverbell Firing Range located at 3200 North Silverbell Road in Tucson, Arizona (“the Site”). Activities conducted under BC’s direction at the Site will be in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, particularly those in Title 29 of the Code of Federal Regulations, Part 1910.120 (29 CFR 1910.120), and other applicable federal, state, and local laws, regulations, and statutes. A copy of this HASP will be kept on site during scheduled field activities.

This HASP addresses the identified hazards associated with planned field activities at the Site. It presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the course of work. In the event of conflicting requirements, the procedures or practices that provide the highest degree of personnel protection will be implemented. If scheduled activities change or if site conditions encountered during the course of the work are found to differ substantially from those anticipated, the Regional Safety Unit Manager and Project Manager will be informed immediately upon discovery, and appropriate changes will be made to this HASP.

BC’s health and safety programs and procedures, including medical monitoring, respiratory protection, injury and illness prevention, hazard communication, and personal protective equipment (PPE), are documented in the BC Health & Safety Manual. The Health & Safety Manual is readily accessible to BC employees via the BC Pipeline. These health and safety procedures are incorporated herein by reference, and BC employees will adhere to the procedures specified in the manual.

BC's HASP has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC’s own employees at the site. A copy of BC's HASP may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's HASP does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's HASP to identify all hazards that may be present at the Site.

Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer’s specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested,

subcontractors will provide BC with a copy of their own HASP for this project or other health and safety program documents for review.

1.1 Site History

Since 1930, the City of Tucson has owned the property where the Silverbell shooting range is located. In 1953, the City converted part of a closed wastewater plant into the armory, and the tower and target storage buildings were constructed in 1954. The layout of the range has remained largely unchanged since construction. However, a backstop systems consisting of metal plates and a conveyor were removed in 1990.

A lead reclamation event was conducted in mid 1990 (after conveyor system disassembly) in which the soil backstop was excavated and screened. The shooting lanes and range floor were also cleaned of metals. The reclamation event resulted in 24 tons of projectiles and screened soil, which were sold to a smelter. No lead reclamation has occurred since. A soil berm currently acts as a backstop.

1.2 Site Description

The property consists of the range floor with a primary and secondary berm at one end. The secondary berm is approximately 285 feet in length and estimated as approximately 20 feet high and 8 – 10 feet in width. Law enforcement personnel use the range for static firing handgun qualification. The range has been used by the Tucson Police Department, the U.S. Border Patrol, and more recently, Homeland Security. Training by the U.S. Border Patrol and Homeland Security has increased since September 11, 2001.

1.3 Scope of Work

The scope of work as described in the proposal submitted by Brown and Caldwell on October 22, 2007 to the City of Tucson includes tasks associated with soil sampling, oversight for operations and maintenance, waste transportation, and disposal activities at the Site and includes:

- Utility clearance and preconstruction meetings associated with the movement of soil associated with the secondary berm.
- Baseline sample collection of the secondary berm.
- O & M oversight for removal of defined areas of the secondary berm.
- Soil confirmation sampling of basal soil following excavation of secondary berm.
- Lead wipe samples will be collected from inside armory building located at the southeast corner of the site.

HEALTH AND SAFETY PLAN

2. KEY BC PROJECT PERSONNEL AND RESPONSIBILITIES

Keith Fritz is the Project Manager (PM). Doug Rosco is the Regional Safety Unit Manager (RSUM). Michele Mahal has been designated as the BC Site Safety Officer (SSO) for this project. The BC project field staff have completed 40 hours of comprehensive health and safety training, which meets the requirements of 29 CFR 1910.120.

The responsibilities of key BC project personnel are presented below.

2.1 Project Manager

The PM is responsible for evaluating hazards anticipated at the Site and working with designated field staff and the RSUM to prepare this HASP to address the identified hazards. The PM is also responsible for the following.

- Informing project participants of safety and health hazards identified at the Site
- Providing a copy of this HASP to BC project participants and a copy to each BC subcontractor prior to the start of field activities.
- Ensuring that the BC project team is adequately trained and perform safety briefings in accordance with this HASP.
- Providing the resources necessary for maintaining a safe and healthy work environment for BC personnel.
- Communicating project safety concerns to the RSUM for determining corrective actions.

2.2 Site Safety Officer

The SSO has on-Site responsibility for verifying that BC team members, including subcontractors, comply with the provisions of this HASP. The SSO has the authority to monitor and correct health and safety issues as noted on-Site. The SSO is responsible for the following.

- Reporting unforeseen or unsafe conditions or work practices at the Site to the PM or RSUM.
- Stopping operations that threaten the health and safety of BC field team or members of the surrounding community.
- Monitoring the safety performance of Site personnel to evaluate the effectiveness of health and safety procedures.
- Performing air monitoring, as necessary, as prescribed in this HASP.
- Documenting field team compliance with this HASP by completing the appropriate BC forms contained in the Appendices of this document.
- Conducting daily tailgate safety meetings and assuring that project personnel understand the requirements of this HASP (as documented by each BC field team member's signature on the Signature Page).

- Limiting access to BC work areas on the Site to BC field team members and authorized personnel.
- Enforcing the “buddy system” as appropriate for Site activities.
- Performing periodic inspections to evaluate safety practices at the Site.
- Identifying the location and route to nearby medical facility and emergency contact information and coordinating appropriate responses in the event of emergency.

2.3 Regional Safety Unit Manager

The RSUM is responsible for final review and modification of this HASP. Modifications to this HASP that result in less protective measures than those specified may not be employed by the PM or SSO without the approval of the RSUM. In addition, the RSUM has the following responsibilities.

- Developing and coordinating the overall BC health and safety program.
- Advising the PM and SSO on matters relating to health and safety on this project.
- Recommending appropriate safeguards and procedures.
- Modifying this HASP, if necessary, and approving changes in health and safety procedures at the Site.

2.4 BC Team Members

BC employees and subcontractors are responsible for familiarizing themselves with health and safety aspects of the project and for conducting their activities in a safe manner. This includes attending site briefings, communicating health and safety observations and concerns to the SSO, maintaining current medical and training status and maintaining and using proper tools, equipment and PPE. Proper work practices are part of ensuring a safe and healthful working environment. Safe work practices are essential and it is the responsibility of BC employees and team members to follow safe work practices when conducting scheduled activities. Safe work practices to be employed during the entire duration of fieldwork include, but are not limited to, the following.

- Following the provisions of this HASP, company health and safety procedures and regulatory requirements.
- Reviewing safety-related information from other parties (i.e., client or contractors) as it relates to BC’s activities.
- Inspecting personal protective equipment (PPE) before on-site use, using only intact protective clothing and related gear, and changing suits, gloves, etc. if they are damaged or beyond their useful service life.
- Set up, assemble, and check out all equipment and tools for integrity and proper function before starting work activities.
- Assisting in and evaluating the effectiveness of Site procedures (including decontamination) for personnel, protective equipment, sampling equipment and containers, and heavy equipment and vehicles.
- Practice the “buddy system” as appropriate for site activities.

- Do not use faulty or suspect equipment.
- Do not use hands to wipe sweat away from face. Use a clean towel or paper towels.
- Practice contamination avoidance whenever possible.
- Do not smoke, eat, drink, or apply cosmetics while in chemically-affected areas of the site or before proper decontamination.
- Wash hands, face and arms before taking rest and lunch breaks and before leaving the site and the end of the workday.
- Check in and out with the SSO upon arrival and departure from the site.
- Perform decontamination procedures as specified in this HASP.
- Notify the SSO immediately if there is an incident that causes an injury, illness or property loss. Incidents that could have resulted in injury, illness or property loss (close call) will also be reported to the SSO.
- Do not approach or enter an area where a hazardous environment (i.e., oxygen deficiency, toxic or explosive) may exist without employing necessary engineering controls, proper PPE and appropriate support personnel.
- Use respirators correctly and as required for the Site; check the fit of the respirator with a negative or positive pressure test; do not wear respirator with facial hair or other conditions that prevent a face-to-facepiece seal.
- Confined spaces will not be entered without appropriate evaluation, equipment, training and support personnel.

2.5 Subcontractors

Subcontractor personnel are expected to comply fully with subcontractor's HASP and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC HASP. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.

HEALTH AND SAFETY PLAN

3. HAZARD ANALYSIS

Hazards at the Site may include physical hazards, chemical hazards or biological hazards. Each type of identified hazard is addressed in the following sections. Hazards that are the specialty of a subcontractor (i.e., operation of a drill rig or excavator) are not addressed in this HASP. Subcontractors are responsible for identifying potential hazards associated with their activities and implementing proper controls.

3.1 Chemical Hazards

Exposure pathways of concern for chemical compounds that may be present at the Site are inhalation of airborne contaminants, direct skin contact with contaminated materials, and incidental ingestion of affected media. Wearing protective equipment and following decontamination procedures listed in Section 7 can minimize dermal contact and incidental ingestion. To minimize inhalation hazards, dust or vapor control measures will be implemented, where necessary, and action levels will be observed during scheduled activities. Site-specific action levels and air monitoring requirements are presented in Section 5.

Known or Suspected Compounds	Source (soil/water/sludge, etc.)	Known Concentration Range (ppm, mg/kg, mg/l)	
		Lowest	Highest
Lead	Soil associated with a firing range	NA	NA
Antimony	Soil associated with a firing range	NA	NA
Arsenic	Soil associated with a firing range	NA	NA
Copper	Soil associated with a firing range	NA	NA

Chemical descriptions of chemicals of concern, including health effects and exposure limits, are presented in the following paragraphs. Each chemical description includes physical and odor recognition characteristics, the health effects associated with exposure, and exposure limits expressed as an 8-hour time-weighted average (TWA). Provided are federal OSHA (OSHA) permissible exposure limits (PELs; located in 29 CFR 1910.1000); California OSHA (Cal/OSHA) PELs (located in 8 CCR 5155); and the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs). For sites outside California, Cal/OSHA PELs are included as an additional reference.

ANTIMONY

Antimony is a silvery-gray, lustrous metal. It is a moderate fire and explosion hazard in the forms of dust and vapor when exposed to heat and flame. Antimony can react violently with acids, halogens and oxidants. Short-term exposure to antimony can cause

gastrointestinal pain, cough, loss of appetite, itching, skin eruptions, and irritation of the eyes, nose, and throat.

- The OSHA PEL is listed as 0.5 mg/m³.
- The Cal/OSHA PEL is listed as 0.5 mg/m³.
- The TLV is listed as 0.5 mg/m³.

ARSENIC

Metallic arsenic is most commonly a gray, brittle, crystalline solid. It can also be in a black or yellow amorphous form. Arsenic is also commonly found in its volatile white trioxide form. Arsenic is used in several insecticides, herbicides, defoliants, desiccants, and rodenticides and appears in a variety of forms. It is also used in tanning, pigment production, glass manufacturing, wood preservation, and anti-fouling coatings. Arsenic is classified as a known carcinogen.

Short-term exposure to arsenic can cause marked irritation of the stomach and intestines with nausea, vomiting, and diarrhea. In severe cases the vomiting and stools are bloody and the exposed individual goes into collapse and shock with weak, rapid pulse, cold sweats, coma, and death. Inorganic arsenicals are more toxic than organic arsenicals, and the trivalent form is more toxic than the pentavalent form. Acute arsenic poisoning usually results from ingestion exposures. Blood cell changes, blood vessel damage, and impaired nerve function can also result from chronic arsenic ingestion. Other effects include skin changes, irritation of the throat, increased risk of cancer of the liver, bladder, kidney, and lung.

- The OSHA PEL is listed as 0.01 mg/m³ for inorganic forms of arsenic and 0.5 mg/m³ for organic forms.
- The Cal/OSHA PEL is listed as 0.01 mg/m³ for inorganic forms of arsenic and 0.2 mg/m³ for organic forms.
- The TLV is listed as 0.01 mg/m³ for arsenic and inorganic arsenic compounds.

COPPER

In its elemental form, copper is a common metal with a distinct reddish color. Human systemic effects by ingestion include nausea and vomiting. In animals, inhalation of copper dust has caused hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, and injury to the lung cells. Short-term exposure to copper dust can cause a feeling of illness similar to the common cold with sensations of chills and stuffiness of the head. Small copper particles may enter the eye and cause irritation, discoloration, and damage.

- The OSHA PEL is listed as 0.1 mg/m³ for copper as a fume, and 1.0 mg/m³ for dust.

- The Cal/OSHA PEL is listed as 0.1 mg/m³ for copper as a fume, and 1.0 mg/m³ for dust.
- The TLV is listed as 0.2 mg/m³ for copper as a fume, and 1.0 mg/m³ for dust.

LEAD

Lead (inorganic) is a bluish-white, silver or gray odorless solid. Short-term exposure to lead can cause decreased appetite, insomnia, headache, muscle and joint pain, colic, and constipation. Considerable data exist on the effects of lead exposure in humans. It is a poison by ingestion and a suspected human carcinogen of the lungs and kidneys. There are data to suggest that lead is a mutagen and can cause reproductive effects. Human systemic effects by ingestion and inhalation (the two routes of absorption) include loss of appetite, anemia, malaise, insomnia, headache, irritability, muscle and joint pains, tremors, flaccid paralysis without anesthesia, hallucinations and distorted perceptions, muscle weakness, gastritis, and liver changes. Recent experimental evidence suggests that blood levels of lead below 10 µg/dl (micrograms per deciliter) can have the effect of diminishing the IQ scores of children.

- The OSHA PEL is listed as 0.05 mg/m³ and the OSHA PEL for tetraethyl lead and tetramethyl lead is listed as 0.075 mg/m³.
- The Cal/OSHA PEL for elemental lead is listed as 0.05 mg/m³ and the Cal/OSHA PEL for tetraethyl lead and tetramethyl lead is listed as 0.075 mg/m³.
- The TLV for elemental lead is listed as 0.05 mg/m³, the TLV for tetraethyl lead is 0.1 mg/m³ and the TLV for tetramethyl lead is 0.15 mg/m³.

Note: Published exposure limits designate a skin notation indicating that dermal contact (to organic forms) can contribute to the overall exposure.

3.2 Hazard Communication

In accordance with the Hazard Communication standard, material safety data sheets (MSDSs) will be maintained on site for chemical products used by BC personnel at the Site (i.e., spray paint, PVC cement, etc.). Subcontractors will be responsible for maintaining MSDSs for chemical products they bring on Site. In addition, containers will be clearly labeled in English to indicate their contents and appropriate hazard warnings. Please note that labeling containers includes, but is not limited to, any waste, used PPE, and/or decontamination materials collected.

3.3 Opening Wells and Well Vaults

Direct-reading instrumentation specified in Section 5 will be used to monitor any work in a well vault at the site where VOCs are a concern. The well vault will be opened carefully with the BC employee staying upwind as much as possible and then left open for a minimum of three minutes to allow the vault to vent. If the well cap is then removed, allow another three minutes for the well head to vent before proceeding. Please note that if there are other established protocols that differ

from 3 minutes; the more protective time increment will be followed. Personnel should stay upwind as much as possible while working in and around the vault.

When removing a well cap, personnel will remain upwind as much as possible and will carefully remove the cap by opening it away from them in order to minimize the likelihood of exposure to vapors. Personnel will wait a minimum of three minutes to allow the well to vent before proceeding.

3.4 Physical Hazards

The following physical hazards, as marked below, have been identified and may be encountered during scheduled field activities.

- | | |
|--|---|
| <input checked="" type="checkbox"/> Slips, Trips and Falls | <input type="checkbox"/> Housekeeping |
| <input checked="" type="checkbox"/> Heavy Equipment | <input type="checkbox"/> Materials and Equipment Handling - Lifting |
| <input checked="" type="checkbox"/> Excavations | <input type="checkbox"/> Drilling |
| <input checked="" type="checkbox"/> Noise | <input checked="" type="checkbox"/> Underground Utilities |
| <input checked="" type="checkbox"/> Overhead Utilities | <input checked="" type="checkbox"/> Equipment Refueling |
| <input type="checkbox"/> Electrical Equipment | <input type="checkbox"/> Lockout/Tagout |
| <input type="checkbox"/> Confined Spaces | <input type="checkbox"/> Fire |
| <input type="checkbox"/> Sharp Objects/Cutting | <input type="checkbox"/> Cutting Acetate Sleeves |
| <input type="checkbox"/> Elevated Platforms | <input type="checkbox"/> Ladder Use |
| <input type="checkbox"/> Traffic | <input checked="" type="checkbox"/> Driving |
| <input type="checkbox"/> Arc Flash Protection | <input type="checkbox"/> Boating Safety |
| <input type="checkbox"/> Building Collapse | <input type="checkbox"/> Personal Safety – Urban Setting |

Actions to be taken to protect against the hazards identified are provided in the sections below.

3.4.1 Slip, Trips and Falls

Slipping hazards may exist due to uneven terrain, wet or slick surfaces, leaks or spills. Tripping hazards may be present from elevation changes, debris, poor housekeeping or tools and equipment. Some specific hazards may include: climbing/descending ladders, scaffolding, berms or curbing. Collectively, these types of injuries account for nearly 50 percent of all occupational injuries and accepted disabling claims. Prevention requires attention and alertness on the part of each worker, following and enforcing proper procedures, including good housekeeping practices, and wearing appropriate protective equipment.

3.4.2 Housekeeping

Personnel shall maintain a clean and orderly work environment. Make sure that all materials stored in tiers are stacked, racked, blocked, interlocked, or secured to prevent sliding, falling, collapse, or overturning. Keep aisles and passageways clear and in good repair to provide for free and safe movement of employees and material-handling equipment. Do not allow materials to accumulate to a degree that it creates a safety or fire hazard.

During construction activities, scrap and form lumber with protruding nails and other items shall be kept clear from work areas, passageways, and stairs. Combustible scrap and debris shall be removed at regular intervals. Safe means must be provided to facilitate removal of debris.

Containers must be provided for collecting and separating waste, used rags and other debris. Containers used for garbage and other oily flammable or hazardous waste such as caustics, acids, harmless dusts, etc., must be separated and equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

3.4.3 Heavy Equipment

Equipment, including earth-moving equipment, drill rigs, or other heavy machinery, will be operated in compliance with the manufacturer's instructions, specifications, and limitations, as well as any applicable regulations. The operator is responsible for inspecting the equipment prior to use each work shift to verify that it is functioning properly and safely.

The following precautions should be observed whenever heavy equipment is in use.

- PPE, including steel-toed boots, safety glasses, high visibility vests, and hard hats must be worn.
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of the worker's intent.
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge. Workers should avoid entering the swing radius of equipment and be aware of potential pinch points.
- Nonessential personnel will be kept out of the work area.

3.4.4 Materials and Equipment Handling - Lifting

The movement and handling of equipment and materials on the Site pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be utilized to assist in the movement of equipment and materials. Workers will not attempt to move heavy objects by themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

Proper lifting techniques include the following.

- Lift with the strength of your knees, not your back.
- Firmly plant your feet approximately shoulder-width apart.
- Turn your whole body, don't bent or twist at the waist.
- Be sure that the path is clear of obstructions or tripping hazards; avoid carrying objects that will obstruct your vision.
- Use caution when holding an object from the bottom to prevent crushing of the hands or fingers when lowering.

3.4.5 Excavations

A competent person who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them, will be present during excavation activities.

The atmosphere will be tested in excavations, before employees are permitted to enter and begin work, greater than 4 feet in depth or where oxygen deficiency or toxic or flammable gases are likely to be present. The atmosphere shall be ventilated and re-tested until flammable gas concentrations less than 5 percent of the lower explosive limit (LEL) and site-specific action levels are obtained. Worker entry will not be allowed if the oxygen concentration is less than 20 percent. In addition, a safe means of access and egress (i.e., a ladder, stairs or ramp) must be provided so that no more than 25 feet of lateral travel is required by employees.

Workers will not enter unstable excavations or excavations greater than 5 feet in depth without appropriate protective systems such as benching, sloping, or shoring. If shoring or shielding systems are not used, side slopes will not be steeper than 1½:1 without written confirmation from the competent person that slope is safe for the soil conditions. Excavations will be constructed in accordance with the OSHA Excavation Safety Standard (29CFR1926 Subpart P).

The competent person will inspect excavations daily. If there is evidence that a cave-in or slide is possible, work will cease until the necessary safeguards have been taken. Excavated material will be placed far enough from the edge of the excavation (a minimum of 2 feet) so that it does not fall back into the opening or affect the integrity of the sidewall. At the end of each day's activities, open excavations will be clearly marked and secured to prevent nearby workers or unauthorized personnel from entering them. Remote sampling techniques will be the preferred method of sample collection in excavations.

3.4.6 Drilling

During all drilling activities, the operator must ensure that the appropriate level of protection and appropriate safety procedures are utilized. The operator will verify that equipment "kill switches" are functioning properly at the start of each day's use. Hard hats, steel-toed boots, and ear and eye protection will be required at all times when working around drill rigs. The proximity of underground and overhead utilities must be identified before any drilling is attempted. The rig may not be moved with the mast in the upright position.

Workers can effectively manage hazards associated with working around heavy equipment if a constant awareness of these hazards is maintained. These hazards include the risk of becoming physically entangled in rotating machinery, slipping and falling, impact injury to eyes, head and body, and injury from machinery operations. Never work or walk on piles of well casings. Make sure all high-pressure lines and hoses have whip checks attached. Constant visual or verbal contact with the equipment operator will facilitate such awareness.

3.4.7 Noise

Noise may result primarily from the operation of heavy equipment, process machinery or other mechanical equipment. Hearing protection with the appropriate noise reduction rating (NRR) shall be worn in areas with high noise levels. A good rule of thumb to determine if hearing protection is needed is the inability to have a conversation at arms length without raising voice levels. If loud noise is present or normal conversation becomes difficult, hearing protection in the form of ear plugs, or equivalent, will be required.

3.4.8 Underground Utilities

Reasonable efforts will be made to identify the location(s) of underground utilities (e.g., pipes, electrical conductors, fuel lines, and water and sewer lines) before intrusive soil work is performed. The state underground utility notification authority (e.g., USA, Dig Alert, Blue Stake, etc.) will be contacted prior to the start of intrusive field activities in accordance with local notification requirements. In areas not evaluated or serviced by the underground utility notification authority, and a reasonable potential for underground utilities exists, one or more of the following techniques will be employed to determine the location of subsurface structures.

- Contracting the services of a qualified private utility locator.
- Having a survey of the subject area conducted by staff trained in the use of subsurface utility locating equipment.
- Subsurface testing (i.e., hand digging or potholing) to the expected depth of probable utilities (not less than 5 feet).

If utilities cannot be located or if unlocated utilities are suspected to be present, subsurface activities (i.e., borings, excavation) should not be conducted before the location(s) or absence of underground utilities is confirmed.

Typical subsurface location marks are as follows.

- Red – electrical
- Yellow – gas/oil/steam
- Blue – water
- Green – sanitary/storm drains/culverts
- Orange – communications
- White – proposed excavation or boring

Intrusive work should be limited to the area 3.3 feet (1 meter) on either side of the location marks. In some special cases such as fiber optics and high-pressure pipelines this area should be expanded to 16.5 feet (5 meters) on either side of the utility.

3.4.9 Overhead Utilities

If work is to be conducted in the vicinity of overhead electrical utilities, the owner of the overhead line will be contacted to determine the maximum voltage. Any overhead utility will be considered to

be energized unless and until the person owning or operating such line verifies that the line is not energized, and the line is visibly grounded at the work site.

Workers will not perform work in proximity to energized high-voltage lines (including scaffolding, well drilling, pile driving, or hoisting equipment) until danger from accidental contact with high-voltage lines has been effectively guarded against.

Equipment with articulated upright booms or masts are not permitted to operate within 15 feet of an overhead utility line (less than 50kV) while the boom is in the upright position. For transmission lines in excess of 50kV, an additional distance of 4 inches for each 10 kV over 50kV will be used.

3.4.10 Equipment Refueling

Care shall be exercised while refueling generators, pumps, vehicles, and other equipment to prevent fire and spills. Personnel shall eliminate static electricity by grounding themselves (touching metal) prior to using refueling hoses and or containers of petroleum liquids. Items being refueled shall be grounded or be located on the ground and not on a trailer, work bench or inside a truck bed. Equipment that is hot must be allowed to cool prior to refueling. Spill response materials shall be available when conducting refueling operations.

3.4.11 Electrical Hazards

Electrical equipment to be used during field activities will be suitably grounded and insulated. Ground-fault circuit interrupters (GFCI), or equivalent, will be used with electrical equipment to reduce the potential for serious electrical shock. Electrical equipment including batteries, generators, panels and extension cords shall be kept dry during use. Extension cords may not be used as a permanent means of providing power and will be removed from service if they are worn, frayed, or if the grounding prong is missing.

Extension cord precautions include the following.

- Be aware of exposed or bare wires, especially on metal grating. Warning: *Electrical contact with metal can cause fatal electrocution.*
- Prior to use, inspect cords for exposed or bare wires, worn or frayed cords, and incorrect splices. Splices are permitted, but there must be insulation equal to the cable, including flexibility.
- Cables and extension cords in passageways, steps or any area where there may be foot traffic should be secured so as to not create a tripping hazard. Overhead cables and extension cords shall be rigged to a height greater than 6 feet.
- Shield extension cords that must run across driveways or areas where vehicle traffic is present.
- Do not run cords across doorways or windows where they can be frayed or cut by a closed door or window.
- Do not run wires through wet or puddled areas.
- Flexible cord sets that are used on construction sites or in damp locations shall be of hard usage or extra hard usage type.

Observation of energized machinery will take place from a safe distance. Only qualified personnel will remove guards, hatch covers, or other security devices if necessary. Equipment lockout procedures and an appropriate facility work permit requirements will be followed. Lockout/tagout procedures will be conducted before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. Workers conducting the operation will positively isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the isolation. Only employees who perform the lockout/tagout procedure may remove their own tags/locks. Employees shall complete lockout/tagout training before initiating this procedure.

Only qualified personnel will remove covers of electrical equipment to expose energized electrical parts. Entering electrical rooms/vaults or areas with live exposed electrical part by BC employees shall be permitted only when accompanied by a qualified personnel after notification and approval of the appropriate facility personnel.

3.4.12 Lockout/Tagout

Lockout/tagout (LO/TO) procedures in accordance with 29 CFR 1910.147 will be performed before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. The purpose of the lockout/tagout (LO/TO) system is to safeguard exposure from machinery, energized electrical circuits, piping under pressure, or any type of energy source from unexpected energization or start up that could at cause harm to an individual. Workers conducting the operation will positively isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the isolation. Only employees who perform the lockout/tagout procedure may remove their own tags/locks. Employees must be thoroughly trained before initiating this procedure.

Whenever multiple personnel (or multiple employers are working on the same worksite) are to be engaged in activities requiring LO/TO, employees/employers shall inform each other of their activities and coordinate their respective LO/TO procedures. Whenever a group lockout/tagout procedure must be performed, they shall utilize a procedure that affords the same level of protection as that provided by the implementation of a personal lockout or tagout device. Group LO/TO devices shall meet the requirements of 29 CFR 1910.145(f)(3).

Basic Lockout/Tagout Procedures

1. Each person will maintain their own lock, key, and lockout device so that no one else can remove the lock.
2. Always notify the operator when work is to be done.
3. Use your own lock to lock out electrical power. Attach a tag or sign to the power disconnect to indicate that maintenance work is in progress. Use the wording "Do Not Operate."
4. Bleed all pressure from pneumatic, hydraulic, or other fluid lines, or safely isolate them from the area where work is being done.
5. Drain contents of lines or tanks as needed. Lock valves open or closed to prevent buildup of pressure.
6. Ground electrical systems as needed.

7. Secure any device under tension or compression so as to prevent accidental movement. Move suspended parts that could drop or cycle to a safe position and block, clamp, or chain them in place.
8. Verify (test) that the mechanism had been isolated from the source of energy.
9. Ensure that all workers remove their individual locks after work is completed. The last worker should remove the locking devices.
10. Ensure that the last person double-checks that all is clear and safe before start-up.

Portable Equipment

Portable electrical equipment such as hand drills, computers, and power saws that use plug type connectors must be unplugged prior to any task that may expose the employee to energized portions of the equipment. Removal of the plug from the power source, such as the generator or wall socket, may be combined with a tagout system, particularly if the plug is at a distance from the equipment being repaired.

3.4.13 Confined Spaces

Entry into confined spaces will be conducted in strict accordance with 29 CFR 1910.146. Confined spaces will be evaluated prior to entry to determine if hazards are present that could pose a risk to entrants. Before workers may enter a permit-required confined space, a pre-entry checklist and entry permit must be completed by the PM or SSO, approved by the RSUM and, all requirements for entry must be met.

Confined spaces may be described as having, but not being limited to, the following characteristics:

- is large enough to permit an employee to enter and perform work; and
- has limited or restricted means of entry and exit; and
- is not equipped, designed, or intended for continuous human occupancy.

If there is any serious health and safety hazard present in the confined space is considered a permit-required confined space (permit space). A permit-space is a confined space that has one or more of the following characteristics:

- contains or has the potential to contain a hazardous atmosphere; or
- contains or has the potential to contain a material with the potential to engulf or entrap an employee; or
- is so configured that an employee may become trapped, disoriented, or asphyxiated by wall configurations or floors that taper to smaller cross sections; or
- contains any other established safety or health hazard (examples may include sources of energy, moving parts or thermal considerations).

All fluid, electrical, and steam lines and other sources of energy that could harm entrants must be completely isolated before entry. The following atmospheric conditions must be met before entry is permissible (air monitoring may be necessary to verify these conditions are met):

- flammable vapor or dust must be at a concentration less than 5 percent of the lower explosive limit (LEL); and

- oxygen must be at a concentration greater than 20 percent and less than 22 percent; and
- hydrogen sulfide concentration must be less than 5 parts per million (ppm); and
- toxic substances must be at a concentration less than their respective permissible exposure limits or specified action limits.

In addition, the following roles must be designated before entry into permit-required confined spaces is allowed: Entry Supervisor; Attendant; and Authorized Entrant(s). Confined space entry for each project also requires training for the project team on written operating procedures, including the use of the Confined Space Pre-Entry Checklist and Confined Space Entry Permit forms.

BC employees are **not** trained in rescue services. Such services are to be arranged locally, prior to entry operations, by the PM. Rescue services can typically be provided by the local fire department or contracted service provider.

3.4.14 Fire/Explosion

Site workers should have an increased awareness concerning fire and explosion hazards whenever working with or near flammable materials, especially when performing any activity that may generate sparks, flame, or other source of ignition. Intrinsically safe equipment is required when working in or near environments with the potential for an explosive or flammable atmosphere. The SSO will verify facility requirements for a “hot work” permit before activities that may serve as a source of ignition are conducted.

Flammable materials will be kept away from sources of ignition. In the event of fire, work will cease, the area will be evacuated, and the local fire response team will be notified immediately. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. A fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the Site.

3.4.15 Sharp Objects/Cutting Utensils

Frequently field tasks require the cutting of items such as rope, packaging or containers. Care should be exercised in using knives and/or cutting implements while performing such cutting tasks. Personnel should cut down and away from their body and other personnel. The item being cut should be braced or secured from movement while cutting. When slicing open acetate liners, such as those utilized in direct push drilling, personnel should use a hook blade cutting implement designed for this task versus a straight blade knife.

3.4.16 Cutting Acetate Sample Sleeves

The cutting of acetate sleeves presents a potential hazard to sampling personnel. By following proper procedures, the risk associated with this activity can be effectively minimized. To remove the soil sample the acetate liner must be cut with a bladed tool or knife. Knives are more frequently the source of disabling injuries than any other hand tool. The principal hazard in the use of knives is

the hand slipping from the handle onto the blade or the blade strikes another part of the body. To prevent this, the following safety procedures should be followed.

- Provide a safety blade holder with a retraction spring on a track where blade mounts. Use a hook type linoleum blade which has a reduced cutting edge. When the hook of the blade is cutting the acetate liner it keeps the blade extended. If the blade breaks or the operator's hand slips the blade automatically retracts into the handle of the safety blade holder.
- Replace blades when they become dull. If material becomes hard to cut the blade is dull.
- Wear leather cut-resistant (such as Kevlar) gloves.
- Wear safety glasses.
- The cutting stroke should be away from the body. If that is not possible, then the hands and body should be in the clear.
- Provide an angle iron device to place the liner in when cutting. This gives a holder for the liner.
- If you drop the knife just let it fall to the ground and DO NOT try to catch it.
- If you lay the knife down make sure the blade is retracted into the holder or the knife is placed in a protective holder.

3.4.17 Elevated Platforms

When working at heights that expose employees to falls greater than 6 feet, especially on sloping roofs and elevated platforms, the requirements of 29 CFR 1926.502 shall be observed. In such instances, a safety harness shall be worn and the lanyard secured at a level not lower than the employee's waist, limiting the free-fall distance to a maximum of 6 feet.

Elevated work platforms shall be constructed, used, and maintained in accordance with Subpart L of the OSHA Construction Safety Orders. Scaffolds and hoisting lines shall be inspected daily by a competent person to verify the integrity of the components. If a material is determined to be defective, it may not be used for any purpose and will be replaced immediately.

A standard railing shall consist of top rail, intermediate rail, toe board, and post. It shall have a vertical height of approximately 42 inches (± 3 inches) from the top surface of the top rail to the floor, platform, runway, or ramp. The top rail shall have a smooth surface throughout. The intermediate rail shall be set half way between the top rail and the floor, platform, runway, or ramp.

A cover of standard strength and construction that is secured against accidental displacement shall guard floor holes, hatchways, or any other openings into which a person can walk. When the cover is not in place, the openings shall be guarded with a standard railing (equipped with a toe board) on all exposed sides. Any cover on floor openings shall be properly labeled or stenciled with letters at least one inch high or greater stating "OPENING – DO NOT REMOVE".

Personal Fall Protection Equipment

Full body harness is the only acceptable means of fall arrest for personnel working over surfaces greater than six feet in height. A Fall Arrest System consisting of safety harness and anchor lanyard must be worn by anyone working on elevated surfaces that lack "general" fall protection such as railings, etc.

Lanyards must be tied off at a point above the worker's head and to a firm structure or a portion thereof designed to hold a weight of 5,000 lbs. Only hooks with locking snaps that operate in "as new" condition will be used. These hooks are also referred to as "double action lanyard hooks".

When other possible means of fall protection (railings, etc.) are not available, individuals working at heights of less than 6 feet must tie-off if there is danger of impalement, especially if the impalement hazard cannot be mitigated in accordance with OSHA standards.

All workers must perform routine inspection of belts/harnesses and lanyards prior to their use. The employer shall conduct regular inspections (every three months) of all fall protection equipment. In addition, there shall be an inspection of all workers' personal tools and equipment prior to the employees using them on the job.

Lanyards are to be used for tie-off purposes only, and damaged belts, harnesses, and lanyards must be retired and discarded.

3.4.18 Ladder Use

Ladders are to be maintained in good condition at all times, with tight joints, hardware, and fittings securely attached, and moveable parts freely operating without binding or undo play. Defective ladders must be "tagged" out of service. Safety "feet" shall be kept in good condition. Ladders are to be visually inspected for possible signs of damage or defects daily, before each use.

Where possible, portable straight rung ladders shall be set up so that the horizontal distance from the top support to the foot of the ladder is $\frac{1}{4}$ of the working length of the ladder. The ladder shall be secured by tying it off to a firm point, or held in place by another worker while in use. If the ladder is used to gain access to a roof or platform, the side rails shall extend at least 3 feet beyond the point of support at the edge of the roof or platform.

Step ladders shall always be set up properly, so that they are in the "A" frame position, level and with all four feet on firm ground, and fully opened with the spreaders locked in place. Personnel are forbidden to stand on the top cap or on the last step of a step ladder, or to stand on the hinged back of a step ladder. A step ladder shall never be used at a straight ladder.

3.4.19 Traffic

Vehicular traffic presents opportunities for serious injury to persons or property. Traffic may consist of street traffic or motor vehicles operated by facility employees or visitors to the Site. Workers and other pedestrians are clearly at risk during periods of heavy traffic. Risk from motor vehicle operations may be minimized by good operating practices and alertness, and care on the part of workers and pedestrians.

Site personnel will wear high-visibility traffic safety vests whenever activities are conducted in areas of heavy traffic. Work vehicles will be arranged to be used as a barrier between site workers and nearby traffic. If required by local ordinances or site location, a traffic control plan will be developed implemented.

It is important to be conscious of all vehicular traffic that may be present during conduct of field operations. Use caution tape, barricades, or safety cones to denote the boundaries of the work area

and to alert vehicle operators to the presence of operations which are non-routine to them. Be careful when exiting the work area and especially when walking out from between parked vehicles to avoid vehicular traffic.

Never turn your Back on Traffic. When working in or near a roadway, walk and work with your face to the oncoming traffic. If you must turn your back to traffic, have a coworker watch oncoming traffic for you.

Vehicle and Worksite Position. Whenever possible, place a vehicle between your worksite and oncoming traffic. Not only is the vehicle a large, visible warning sign, but if an oncoming car should fail to yield or deviate, the parked vehicle, rather than your body, would absorb the first impact of a crash. Turn the wheels so that if the vehicle were struck, it would swing away from the worksite. Even though the vehicle would protect you in a crash, it might be knocked several feet backward. Always leave some room between the rear of the vehicle and the work area.

Use of Signs and Cones to Direct Traffic. Traffic signs and cones are used to inform drivers and direct traffic away from and around you. Cones and signs are only effective if they give oncoming drivers enough time to react and make it clear how traffic should react.

Cone Positioning. The most common coning situation is setting a taper of cones that creates a visual barrier for oncoming motorists and gradually closes a lane.

The position of the taper depends on the road width, position and size of the work area, and also on the characteristics of the traffic.

3.4.20 Driving

A lot of driving is required to get to, from, and between project Sites. Safe vehicle maintenance and operation must be a priority. It requires knowledge of directions to (and conditions of) the Site in advance, careful exiting and merging into traffic, anticipating the unexpected, remaining alert to one's physical and mental condition, resisting distractions such as cell phone use, other car activities and contacting assistance when needed. Report all vehicle accidents/incidents to BC's Risk Manager.

3.4.21 Arc Flash Protection

An arc flash is a short circuit through the air when insulation or isolation between electrified conductors is breached or can no longer withstand the applied voltage, an arc flash occurs. Statistics show that there are 5 to 10 arc flash explosions a day near electrical equipment that result in hospitalization of a burn victim. An arc flash can be caused by common occurrences such as dropping tools, accidental contact with electrical systems, and build up of dirt or corrosion.

The temperature of an arc can reach more than 35,000 F as it creates a brilliant flash of light and a loud noise. Concentrated energy explodes outward from the electrical equipment, spreading hot gases, melting metal, causing death or severe burns, and creating pressure waves that can damage hearing or brain function and a flash that can damage eyesight. The fast-moving pressure wave also can send loose material such as pieces of equipment, metal tools, and other objects flying, injuring anyone standing nearby.

Regulations require the calculation of the “flash protection boundary” inside which qualified workers must be protected when working. This boundary is an imaginary sphere surrounding the potential arc point, “within which a person could receive a second-degree burn if an electrical arc flash were to occur,” according to the National Fire Protection Association (NFPA) 70E standard. Brown and Caldwell’s Health and Safety Manual gives direction of when and where to establish this boundary.

BC’s Electrical Safety/Arc Flash Policy provides information and instruction for BC employees who work on or near energized power circuits, electrical distribution equipment, electrical utilization equipment and those who inspect energized equipment, where a phase-to-ground or phase-to-phase short or fault occurrence may cause an Arc Flash event.

BC employees shall comply with BC Health and Safety Requirements Manual # 207 – Lockout/Tagout and treat electrical equipment and circuits as energized until:

1. Lock-Out / Tag-Out protection is in place and the equipment or circuit has been tested to verify “no voltage” present, by a trained and qualified electrical worker, or
2. The equipment or circuit has been physically isolated from every power source, tested, and clearly labeled.

For those BC employees involved with **energized electrical work** (i.e. design verification, equipment check-out, or start-up adjustments), the following ordered approach shall be used:

1. BC employees shall seek to have a trained and qualified electrical worker perform all energized electrical hands-on work (i.e. switching, metering, testing, etc.) while BC employees remain outside the flash protection boundary.
2. BC employees that closely supervise work within the flash protection boundary shall first receive approval from the Project Manager and Site Safety Officer (SSO).
3. Prior to performing this work, the Project Manager (PM) shall ensure that a Field Work Safety Plan (FWSP) is prepared and approved by the PM, the employee’s manager, the SSO, and cognizant Health and Safety Manager.
4. Only “qualified BC employees” shall enter the flash protection boundary wearing the proper Personal Protective Equipment (PPE) and only for Hazard/Risk Categories 0-2 – see the ‘Warning’ section below. BC personnel shall acquire the proper PPE from the SSO and/or RSUM.

WARNING

Qualified BC personnel are limited to work in Hazard/Risk Categories 0-2, and therefore only require PPE meeting the requirements of Hazard/Risk Categories 0-2.

Only qualified electricians shall conduct work categorized as a Hazard/Risk Category of 3 or 4.

Qualified BC personnel are NOT to cross a flash protection boundary which involves a Hazard/Risk Category 3 or 4 situation.

BC employees and management shall review the **Health and Safety Manual #513 – Arc Flash** for detailed requirements.

Questions concerning this policy should be directed to the BC Office Electrical Engineering Manager and to the RSUM.

Definitions

Energized Electrical Work. Work performed on or near energized electrical systems or equipment with exposed components operating at 50volts or greater. Electrical system testing, thought to be de-energized, but not yet proven to be (for example, a LO/TO effectiveness check).

Flash Protection Boundary. The distance from energized exposed electrical equipment at which an unprotected person will receive a curable burn: 2nd degree burn or blistering. Work performed inside this boundary requires that the person be a “qualified person” and the use of Personal Protective Equipment (PPE) to protect against arc flash burns.

Newly installed/serviced electrical equipment may contain an Arc Flash Label that will identify the energy, hazard category and PPE requirements associated with the equipment. For all other unlabeled equipment, where the specific flash protection boundary (energy, hazard category, and applicable PPE) is not established or cannot be established first (prior to live electrical exposure), BC personnel shall maintain a 4-foot minimum observation distance (BC prefers 10 feet) from the exposed (i.e. doors open, covers off) live electrical equipment. In the event that the 4-foot minimum distance must be crossed, BC personnel shall don PPE appropriate for Hazard/Risk Category 2.

Qualified BC Employee. A person with the training and experience having knowledge of energized electrical equipment hazards from an operational standpoint and from the safety training standpoint.

Educational credentials alone do not make a person qualified. Determination of qualification shall be established by the employee’s supervisor or other designated knowledgeable management representative.

3.4.22 Boating Safety

Boating or similar activities on aerated water treatment ponds and/or tanks by BC personnel is not permitted. The aeration process affects the buoyancy of the liquid and therefore boats can not consistently stay afloat.

Performing work activities from a boat can present unique hazards to employees. The following guidelines can help mitigate the risk. The boat can become unstable if the weight in it is excessive or loaded improperly. Too much weight will reduce maneuverability and freeboard (the height of the boat sides above the water) and can increase the risk of sinking.

When boarding the boat, the operator must be sure that the boat is secure. With one hand on the boat, each employee should quickly lower themselves straight down into the center of the boat. A United States Coast Guard (USCG) certified personal floatation device will be worn by each BC employee in the boat. In addition, other USCG-required items (i.e., throwable cushion, retrieval line, etc.) will be present on the boat. To move around in a boat, one should step along the fore-and-aft centerline of the boat while the boat is held in place along the pier.

Do not board the boat while carrying equipment, rather first board the craft and then have someone hand in the equipment or place the equipment in the boat prior to launch. The amount and location

of weight is critical and can reduce the risk of capsizing. Weight should be kept towards the middle or centerline of the boat, both fore-and-aft and side-to-side, also the weight should be kept low to the bottom of the boat to reduce the center of gravity.

It is not anticipated that waves of substantial size will be encountered, however, if a wave approaches the boat, steer the bow towards the oncoming wave. Overloading the boat increases draw and the potential for swamping. Watercraft must be operated within the boat manufacturers weight limits.

Should the boat capsize, Brown and Caldwell personnel shall abandon the boat and return to shore as quickly as possible. It is important that the employees attempt to remove themselves from the water as soon as possible, and get inside and call for help. Hypothermia (cold stress) is a significant risk for anyone involved in a boating accident due to the rapid conduction of body heat by cold water. Wet or dry suits are recommended for cold weather/cold water (less than 45° F) operations.

3.4.23 Building Collapse

Buildings collapse for a variety of reasons. Natural phenomena such as earthquakes, hurricanes, floods, mudslides, avalanches, and storms are the usual cause for building collapses. Vacant buildings may be at risk for collapse since maintenance-related activities have been often neglected thus resulting in structural damage.

Project personnel should attempt to answer the following questions whenever working near suspect building structures.

- Are there any vacant buildings present on site?
- Will it be necessary to enter or work next to the vacant building(s)?
- Are there any apparent hazards including external damage, falling objects, sticky doors, structural instability, or possible asbestos and/or lead paint?
 - External damage may include, but not necessarily be limited to, foundation cracks, damaged or missing porch roofs and overhangs supports, gaps between steps and the structure, missing supports or portions of walls, and “washed away” ground.
 - Falling objects may include, but not necessarily be limited to, building cornices, gutters, bricks, and roofs/roofing materials.
- Be aware that when entering a building, if the door sticks at the top it could mean the ceiling is ready to fall. If you force the door open, stand outside the doorway clear of falling debris.
- Has the building(s) been inspected by a qualified professional and deemed safe for entry?
- Are there any viable alternatives for conducting work that preclude the need to enter or work next to the suspect building(s)?

If you have any concerns about entering the building after answering the above questions, speak with the PM immediately. The client will need to be informed that a proper building inspection or engineering controls may be needed before work can be performed.

If you don't feel safe entering a building, then notify the PM and RSUM and stay outside the building at an appropriate distance to avoid falling debris.

3.4.24 Personal Safety - Urban Setting

Working in a distressed neighborhood may present hazards associated with street violence or other crime. In these situations, mental preparation before going to the Site and awareness while on Site are of key importance. If in doubt, always ask Site or client personnel about the safety of a neighborhood. Forethought should be given to arranging to work during daylight hours if possible. Take advantage of any Site security measures (monitoring cameras, security guards) and investigate such measures prior to the field work. Once in the field, work in parties of two or more and stay within view of the general public. Keep a charged cell phone nearby or on your person at all times. Become familiar with your location so you can effectively communicate it over the phone.

In addition to these basic principals, the following is a list of common personal safety rules that apply not only to work at the Site, but to general safety practices while in the field and also between work shifts.

- If at all possible, work/travel in groups. Do not venture out alone.
- Be alert. Notice who passes you and who's behind you. Maintain distance between yourself and strangers. Know where you are, and note potential exit paths.
- If work has paused do not appear slack or distracted. Do not sit in a vehicle with the doors unlocked.
- Walk in well-lighted areas. Don't walk close to bushes, alleys, and so on. In dark or deserted neighborhoods, walk down the middle of the street (be alert to vehicle traffic).
- If a car pulls up slowly, or the occupants of the vehicle bother you, cross the street and walk or run in the other direction. If you are pursued, dial 911.
- If you feel someone is following you, turn around and check. Proceed to the nearest lighted house or place of business.
- Don't overburden yourself with bags or packages, which might impede running or taking care of yourself.
- Be aware of loose clothing, packs/purses and hair. These give an assailant an easier method of grabbing and controlling you. Wear unrestrictive clothing for ease of movement (but not overly loose).
- Carry a non-weapon personal safety device (such as a whistle, panic button, or key light) - anything that could visually or audibly draw attention to your location.
- What you carry in your hand(s) is important. Valuables make you a potential target. Items such as a hand auger or tool may help you be perceived as a less-than-inviting victim.
- Carry as little cash as possible.
- Hold your purse tightly, close to your body. Keep your wallet in a front or in a buttoned, hip pocket. When at a fixed location, lock your valuable items away and out of site (i.e., in a trunk).
- Be careful when people stop you for directions or information. Always reply from a distance; never get too close to a stranger's car.
- If you feel that you are in danger, don't be afraid to scream and run.
 - toss wallet/keys away from direction of escape

- don't attach car keys to house keys
- leave large valuables (purse, laptop) locked and hidden in the vehicle.

3.5 Natural Phenomena

Natural phenomena such as weather-related emergencies and acts of nature can affect employees' safety. Natural phenomena can occur with little or no warning. If an emergency situation arises as a result of natural phenomena, adhere to the contingency procedures outlined in Section 10. The following natural phenomena have been identified and may be encountered during scheduled field activities.

- | | |
|---|--|
| <input checked="" type="checkbox"/> Sunburn | <input checked="" type="checkbox"/> Heat Stress |
| <input type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Lightening/Electrical Storms |
| <input type="checkbox"/> Hurricanes | <input checked="" type="checkbox"/> Tornadoes and Strong/Straight Line Winds |
| <input type="checkbox"/> Earthquakes | |

3.5.1 Sunburn

Working outdoors with the skin unprotected for extended periods of time can cause sunburn to the skin. Excessive exposure to sunlight is associated with the development of skin cancer. Field staff should take precautions to prevent sunburn by using sunscreen lotion and/or wearing hats and long-sleeved garments.

3.5.2 Heat Stress

Adverse climate conditions, primarily heat, are important considerations in planning and conducting site operations. Heat-related illnesses range from heat fatigue to heat stroke, with heat stroke being the most serious condition. The effects of ambient temperature can cause physical discomfort, loss of efficiency, and personal injury, and can increase the probability of accidents. In particular, protective clothing that decreases the body's ventilation can be an important factor leading to heat-related illnesses.

To reduce the possibility of heat-related illness, workers should drink plenty of fluids and establish a work schedule that will provide sufficient rest periods for cooling down. Personnel shall maintain an adequate supply of non-caffeinated drinking fluids on site for personal hydration. Workers should be aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These are summarized in the table below.

Condition	Signs	Symptoms	Response
Heat Rash or Prickly Heat	Red rash on skin.	Intense itching and inflammation.	Increase fluid intake and observe affected worker.
Heat Cramps	Heavy sweating, lack of muscle coordination.	Muscle spasms, and pain in hands, feet, or abdomen.	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.

Condition	Signs	Symptoms	Response
Heat Exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordination; fainting.	Weakness, headache, dizziness, nausea.	Remove worker to a cool, shady area. Administer fluids and allow worker to rest until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.
Heat Stroke	Red, hot, dry skin; disorientation; unconsciousness	Lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse.	Immediately contact emergency medical services by dialing emergency medical services. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim by administering small amounts of cool water (if conscious), loosening clothing, and placing cool compresses at locations where major arteries occur close to the body's surface (neck, underarms, and groin areas). Carefully follow instructions given by emergency medical services until help arrives.

3.5.3 Cold Stress

Workers performing activities during winter and spring months may encounter extremely cold temperatures, as well as conditions of snow and ice, making activities in the field difficult. Adequate cold weather gear, especially head and foot wear, is required under these conditions. Workers should be aware of signs and symptoms of hypothermia and frostbite, as well as first aid for these conditions. These are summarized in the table below.

Condition	Signs	Symptoms	Response
Hypothermia	Confusion, slurred speech, slow movement.	Sleepiness, confusion, warm feeling.	Remove subject to a non-exposed, warm area, such as truck cab; give warm fluids; warm body core; remove outer and wet clothing and wrap torso in blankets with hot water bottle or other heat source. Get medical attention immediately.
Frostbite	Reddish area on skin, frozen skin.	Numbness or lack of feeling on exposed skin.	Place affected extremity in warm, not hot, water, or wrap in warm towels. Get medical attention.
Trench Foot	Swelling and/or blisters of the feet	Tingling/itching sensation; burning; pain in the feet	Remove wet/constrictive clothing and shoes. Gently dry and warm feet with slight elevation. Seek medical attention.

3.5.4 Lightning/Electrical Storms

Lightning can be unpredictable and may strike many miles in front of, or behind, a thunderstorm. Workers will therefore cease field operations at the **first** sign of a thunderstorm and suspend activities until at least 30 minutes after the last observed occurrence of lightning or thunder. For purposes of this HASP, signs of a thunderstorm will include any visible lightning or audible thunder.

In the event of a thunderstorm, field personnel will take the following actions.

- Get inside a permanent building structure (not a shed or canopy) or fully enclosed metal vehicle (not a convertible or camper shell) with the windows fully up.
- If in a house or building, do not use the telephone or any electrical appliance that's connected to the building's electrical wiring.

- Stay away from tall isolated objects, such as trees, drill rigs, telephone poles, or flag poles.
- Avoid large open areas, such as fields or parking lots, where a person is the relatively highest object.
- Stay away from lakes, ponds, railroad tracks, fences, and other objects that could transmit current from a distant lightning strike.
- If caught out in the open without time to escape or find shelter, seek a low area (if time permits), crouch down, and bend forward holding the ankles. Tuck the head so that it's not the highest part of the body, without letting it touch the ground. Under no circumstances lay down.

If a person struck by lightning contact emergency medical services, even if he/she appears only stunned or otherwise unhurt as medical attention may still be needed. Check for burns, especially at fingers and toes, and areas next to buckles and jewelry.

3.5.5 Hurricanes

The key to responding to hurricane conditions is being informed. Before taking to the roads to leave for or from a jobsite during suspect hurricane conditions, listen to the radio for current and forecast conditions. Know what the weather reports mean by "watch" and "warning." A hurricane watch means hurricane conditions are possible in the specified area of the watch, usually within 36 hours. A hurricane warning indicates hurricane conditions are expected in the specified area of the warning, usually within 24 hours.

If watch or warning conditions exist, employees will communicate with the project manager to determine the appropriate course of action. Travel to or from work is not recommended if the employee will travel in the vicinity of a hurricane warning area. Restrictions on travel during hurricane watches are largely dependent on the actual weather conditions at the time. Employees are discouraged from driving during weather conditions where visibility and vehicle control are severely limited.

For long term projects with temporary or permanent office area, keep an emergency preparedness kit consisting of, but not limited to:

- Current project/office contacts list - how to reach folks in an emergency
- Blankets
- Flashlights
- Radio (operated by batteries)
- Batteries for flashlight and radio (note: batteries should be replaced annually to assure freshness)
- Water (unless there is a water bubbler that can be used with no electricity)
- Snack crackers, dried fruit, etc. - a source of food that won't go bad.

3.5.6 Tornadoes and Strong/Straight Line Winds

Tornadoes and strong or straight line winds are potentially dangerous weather conditions because both have the ability to generate on very short notice (in some cases under one hour from clear

weather conditions). Tornadoes and strong or straight line winds both have the same warning properties and recommendations. If a tornado “watch” is issued for your area, it means that a tornado is “possible”. If a tornado “warning” is issued, it means that a tornado has actually been spotted, or is strongly indicated on radar, and it is time to go to a safe shelter immediately.

Be alert to what is happening outside, but do not place yourself in jeopardy by standing next to windows. Some common observations during a tornado include: a sickly greenish or greenish-black color to the sky; if there is a watch or warning announced or posted; an abrupt fall of hail (however, hail can occur in the absence of a tornado); a strange quiet that occurs within or shortly after a thunderstorm; clouds moving by very fast, especially in a rotating pattern or converging toward one area of the sky; a sound like a waterfall or rushing air at first, but turning into a roar as it comes closer (the sound of a tornado has been likened to that of both railroad trains and jets); debris dropping from the sky; an obvious “funnel-shaped” cloud that is rotating; or debris such as branches or leaves being pulled upwards, even if no funnel cloud is visible.

During a tornado warning or tornado occurrence, each employee is instructed to do the following:

- Proceed to interior rooms and halls on the lowest floor (***do not use an elevator to exit an upper floor***). Avoid halls that open to the outside in any direction. If there are no interior hallways, avoid those that open to the southwest, south, or west, since that is usually the direction from which the tornado will come.
- Stay away from glass, both windows and doors. Crouch down, and make as small a “target” as possible. If you have something with which to cover your head, do so, otherwise, use your hands.
- Exercise extreme caution when leaving your area of shelter. Be aware of potential hazards (i.e., natural gas smell, smoke, fire). In the event these hazards are encountered in your area of shelter, immediately evacuate the shelter. If the building/shelter has been damaged by a tornado, do not flush the toilets, as the sewer lines may have been damaged.
- If you are traveling in an automobile and can see a tornado, do not stay in your car and try to outrun a tornado. If possible, stop the car and enter the nearest business and seek shelter.
- If you are outside and it is not possible to get inside, seek a low lying ditch, culvert, etc. and keep your body as low to the ground and as braced as possible.

3.5.7 Earthquakes

Earthquakes strike suddenly, violently, and without warning. If your project is located near a fault line, earthquakes are an unpredictable possibility. For long term projects with temporary or permanent office area, keep an emergency preparedness kit consisting of, but not limited to:

- Current project/office contacts list - how to reach folks in an emergency
- Blankets
- Flashlights
- Radio (operated by batteries)
- Batteries for flashlight and radio (note: batteries should be replaced as needed to assure freshness)
- Water (unless there is a water bubbler that can be used with no electricity)

- Snack crackers, dried fruit, etc. - a source of food that won't go bad.

This kit is meant to serve as overnight survival in the event that it becomes unsafe to leave the project site. The kit's contents should be suited to meet the size and needs of your project.

If you feel the earth shaking, consider the following tips:

- Drop down; take cover under a desk or table and hold on.
- Stay indoors until the shaking stops and you are sure it is safe to exit.
- Stay away from bookcases, shelves, or anything that could fall on you.
- Stay away from windows.
- If inside a building, expect fire alarms and sprinklers to go off during the quake.
- If you are outdoors, find a clear spot away from buildings, trees, and power lines. Drop to the ground and cover your head.

If you are in a car, slow down and drive to a clear place, preferably away from power lines. Stay in the car until the shaking stops.

3.6 Biological Hazards

The following biological hazards have been identified and may be encountered during scheduled field activities.

- ☐ Bloodborne Pathogens/Sanitary Waste
- ☒ Rodents and Mammals
- ☒ Reptiles/Snakes
- ☒ Venomous Insects
- ☐ Mosquitoes
- ☐ Fire Ants
- ☒ Spiders/Scorpions
- ☐ Ticks
- ☐ Poisonous Plants

If any biological hazards are identified at the Site, workers in the area will immediately notify the SSO and nearby personnel.

3.6.1 Bloodborne Pathogens/Sanitary Waste

Potential exposure to bloodborne pathogens may occur during some work activities (e.g., sewer video surveys or source sampling), rendering first aid or CPR. Direct contact is an important route of exposure for bloodborne pathogens due to puncture injuries, contact with abraded skin, or contact with areas such as the eyes, without appropriate protection. While very few organisms can enter the body through normal intact skin, direct contact with sewage, blood and body fluids is to be avoided. Site personnel should thoroughly wash their hands and face before eating, drinking or smoking and before leaving the work site.

Exposure controls and Universal Precautions are required at suspect locations, in order to prevent contact with blood or other potentially infectious materials as specified in Brown and Caldwell's *Bloodborne Pathogens Program*. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual. A Hepatitis B vaccination will be offered to BC personnel before the person participates in a task where direct exposure to potentially infectious materials is a possibility (i.e., first aid or CPR). For personnel who have potential exposure to sanitary wastes, a current tetanus/diphtheria inoculation or booster is recommended.

3.6.2 Rodents/Mammals

Animals may potentially carry the rabies virus or disease causing agents. Do not attempt to feed or touch animals. Feces from some small mammals may contain diseases such as Hanta Virus. Avoid generating dust in the vicinity of rodent feces. In addition, animals such as dogs or wild predators (i.e., cougars or coyotes) may pose an attack hazard. Persons should slowly back away in a non-threatening manner if an encounter with a threatening animal occurs. In order to avoid such encounters, use the buddy system and make noise when working in areas where such animals may be present.

3.6.3 Reptiles/Snakes

The primary reptiles of concern are venomous snakes (rattlesnake, water moccasin, and copperhead). Avoid contact and areas that may harbor snake populations including high grass, shrubs, and crevices. In the event of a bite, immobilize the affected area and contact emergency medical services. If more than 30 minutes from emergency care, apply bandage wrap two to four inches above the bite (**note:** bandage should be loose enough to slip your finger underneath).

Wear shoes and heavy pants when walking and hiking in areas where snakes are likely found. Do not reach into rocky cracks, under logs, or large rocks. Even if a snake looks dead, do not touch it. A snake can still bite up to one hour after its death. Do not get near or tease a snake. Snakes are shy creatures and generally will not attack unless bothered.

Diamond Back Rattle Snake

Diamond backs are large snakes. They have a row of dark diamonds down the back and a rattle on their tail. These snakes have cat-like eyes and a pit between their nostril and eye. Eastern diamond backs like pine flat woods and scrub areas where palmetto thickets and gopher tortoise burrows are found. These snakes travel during the day and hide at night.

Timber Rattle Snake

Timber rattle snakes have a reddish-brown stripe running down the center of their back and black crossbands. Their tails are solid black with a rattle. These snakes have cat-like eyes and a pit between their nostril and eye. Timber rattlers live in damp river beds, pine flat woods, swamps, and cane thickets.

Pygmy Rattle Snake

These small snakes are light to dark grey in color. They have a tiny rattle. Pygmy rattle snakes have cat-like eyes and a pit between their nostril and eye. These snakes are found in lowland pine flat

woods, prairies, around lakes, ponds, and swamps. Pygmy rattlers are aggressive and will strike anything within striking range.

Cottonmouth (Water Moccasin)

Young cottonmouths are often mistaken for copperheads because of their reddish-brown crossbands. As these snakes age, their cross bands darken until they become almost solid black. Cottonmouths live near water sources like lakes, streams, rivers, ponds, and swamps. When threatened, cottonmouths may coil and open their mouths as though ready to bite. The white inside of the mouth is what gives this snake its name, "cottonmouth".

Copperhead

Copperheads have dark coppery red-brown hourglass crossbands on a lighter brown color. The top of the head is covered with large plate-like scales. Copperheads have cat-like eyes and a pit between their nostril and eye. These snakes live in rocky, wooded areas and low, wet swampy areas. Copperheads are sluggish and rarely bite, unless stepped on or touched.

Coral Snake

The body of this snake is ringed with black, yellow and red bands. (Remember: Red on yellow can kill a fellow. Red on black, venom lack.) The head of a coral snake is black, while the tail is black and yellow.

3.6.4 Venomous Insects

Common examples include bees, fire ants and wasps. Avoid contact with insects and their hives. If stung, remove the stinger by gently scraping it out of the skin (do not use tweezers). If the worker is stung by an insect, immediately apply an ice pack to the affected area and wash area with soap and water and apply antiseptic. If an allergic reaction occurs, contact emergency medical services for appropriate treatment. Seek medical attention immediately if you are allergic to venomous stings such as bees or if anaphylaxis symptoms are present.

3.6.5 Mosquitoes

Mosquitoes may transmit diseases such as West Nile Virus. Symptoms of West Nile Virus include: fever, headache, tiredness, body aches, and occasional rash. Avoid mosquito bites by wearing long sleeved shirt and long pants. Apply insect repellent to clothes and/or skin (if FDA approved for topical use). Report any dead birds in the area to local health officials. Mosquitoes are most active from dusk to dawn.

3.6.6 Fire Ants

Red and Black Fire Ants are capable of inflicting numerous stings (7 to 9) per ant in a matter of seconds, and large numbers of fire ants will typically attack at the same time. Fire ants are very aggressive and will sting simply upon coming in contact with skin. Individuals who are allergic to bees should carry bee sting kits when there is the potential to come in contact with fire ants. Fire ants are predominantly located in the southern United States.

The best way to avoid fire ants is to avoid disturbing their mounds. Fire ant mounds are typically constructed in disturbed habitats such as open fields, along roadsides, lawns, and many other open sunny areas. The mounds are constructed of dirt and/or other organic materials. Mounds are typically 10” to 24” in diameter and approximately 18” in height. If you disturb a mound, get away from the mound immediately.

Fire ant stings typically leave tiny red blisters and sometimes white pustules. Symptoms of stings include blistering, burning, swelling, pain, and irritation of the affected area. Recommended treatment consists of antihistamines along with topical antibiotic cream. Anaphylaxis symptoms such as shortness of breath, discomfort, lowered heart rate, etc. may also accompany fire ant stings. Seek medical attention immediately if you are allergic to venomous stings such as bees or if anaphylaxis symptoms are present.

3.6.7 Spiders/Scorpions

The black widow and brown recluse spiders are the most venomous. Avoid contact with spiders and scorpions and areas where they may hide. They favor dark hiding places. Inspect clothing and shoes before getting dressed. Wear gloves and safety shoes when working with lumber, rocks, inspecting buildings, etc. Signs and symptoms of bites include: headache, cramping pain/muscle rigidity, rash and/or itching, nausea, dizziness, vomiting, weakness or paralysis, and convulsions or shock. Wash bite area with soap and water and apply antibiotic cream. Contact emergency medical services if allergic reaction or severe symptoms occur.

3.6.8 Ticks

Deer ticks may carry and transmit Lyme disease to humans. Signs of Lyme disease include a reddish “bulls-eye” around the affected area approximately a week after the bite. Symptoms include headache, fever, and muscle/joint pain. Persons suspecting infection should contact a health professional. Whenever possible avoid areas likely to be infested with ticks during the spring and summer months.

Wear light-colored clothing so ticks can be easily spotted and removed. Wear long sleeves and pants and tuck pant legs into boots or socks. Apply insect repellents to clothing and skin (if FDA approved for topical application). Persons with long hair should tie their hair back to minimize the potential for ticks to nestle in the scalp.

Personnel should self perform tick checks once daily field work is completed. If a tick is embedded in the skin, use tweezers to grasp the tick’s head (near the skin) and pull straight out. Consider saving the removed tick for laboratory analysis.

3.6.9 Poisonous Plants

Common examples include poison ivy, poison oak and poison sumac. Avoid contact. Long-sleeved shirts and pants will allow some protection against inadvertent contact. If contact occurs, immediately wash the affected area thoroughly with soap and water. If an allergic reaction occurs, seek the care of a medical professional.

Poison Ivy is a trailing or climbing woody vine or a shrub-like plant with leaves that are each divided into three broad, pointed leaflets. The leaflets are commonly dark glossy green on top and slightly hairy underneath. They produce small yellowish or greenish flowers followed by berry-like drupes.



Poison Oak is a member of the same family as poison ivy and has a very similar appearance. Poison oak has leaves divided into three leaflets and generally has three to seven distinct lobes. Typically they are a shrubby type plant that can grow to eight feet in height, or sometimes can be a climbing plant.



The best way to prevent exposure is the ability to recognize these plants. Conduct an initial survey of the area to determine if the plants are present in the work area, and avoid contact with them.

If plants are located and work must be conducted in that area, have the plants removed if possible. If this is not possible, wear long sleeved shirts, gloves, and a heavy material type pants. Remember not to touch contaminated clothing. There are products available that can be applied to exposed skin, (similar to sunscreen products) prior to working around the plants. Tyvek suits may be another option used at the wearer's discretion to keep poisonous plant oils from getting on clothing. Please note that using Tyvek suits may increase the risk of heat stress conditions so extra precautions should be taken such as more frequent breaks and drinking plenty of fluids.

4. PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to protect employees from hazards and potential hazards they are likely to encounter during site activities. The amount and type of PPE used will be based on the nature of the hazard encountered or anticipated. Respiratory protection will be utilized when an airborne hazard has been identified using real-time air monitoring devices, or as a precautionary measure in areas designated by the RSUM or SSO.

Dermal protection, primarily in the form of chemical-resistant gloves and coveralls, will be worn whenever contact with chemically affected materials (e.g., soil, groundwater, sludge) is anticipated, without regard to the level of respiratory protection required.

On the basis of the hazards identified for this project, the following levels of personal protective equipment (PPE) will be required and used. Changes to the specified levels of PPE will not be made without the approval of the SSO after consultation with the RSUM.

4.1 Conditions Requiring Level D Protection

In general, site activities will commence in Level D PPE unless otherwise specified, or if the SSO determines on site that a higher level of PPE is required. Air monitoring of employee breathing zones will be routinely conducted using real-time air monitoring devices to determine if upgrading to Level C PPE is necessary. Level D PPE will be permitted as long as air monitoring data indicate that airborne concentrations of chemicals of concern are maintained below the site-specific action levels defined in Section 5.2. Level A or B PPE is not anticipated and is therefore not addressed in this plan. If Level A or B PPE is necessary, this HASP will be revised to reflect changes as appropriate.

It is important to note that dermal protection is required whenever contact with chemically-affected materials is anticipated. The following equipment is specified as the minimum PPE required to conduct activities at the Site.

- Work shirt and long pants
- ANSI- or ASTM-approved steel-toed boots or safety shoes.
- ANSI-approved safety glasses
- ANSI-approved hard hat

Other personal protection readily available for use, if necessary, includes the following items.

- Outer nitrile gloves (11 mil or thicker) and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event).
- Chemical-resistant clothing (e.g., Tyvek or polycoated Tyvek coveralls) when contact with chemically affected soils or groundwater is anticipated.

- Safety shoes/boots with protective overboots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated.
- Hearing protection.
- Sturdy work gloves.
- High-visibility traffic safety vest.

Work will cease and PPE upgraded if action levels specified in Section 5.2 are exceeded. The RSUM will be notified whenever PPE is upgraded or downgraded.

4.2 Conditions Requiring Level C Protection

If air monitoring indicates that the site-specific action levels defined in Section 5.2 are exceeded, workers in the affected area(s) will upgrade PPE to Level C. In addition to the protective equipment specified for Level D, Level C also includes the following items.

- NIOSH-approved half- or full-face air-purifying respirator (APR) equipped with appropriate cartridges (reference Section 5.2). Note: safety glasses are not required when wearing a full-face APR.
- Outer nitrile gloves (11 mil or thicker) and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event).
- Chemical-resistant clothing (e.g., Tyvek or polycoated Tyvek coveralls) when contact with chemically affected soils or groundwater is anticipated.
- Safety shoes/boots with protective overboots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated.
- Hearing protection.
- Sturdy work gloves.

Respirators will be stored in clean containers (i.e., self-sealing bag) when not in use. Respirator cartridges will be replaced in accordance with the following change-out schedule.

Type of Cartridge	Cartridge Change-out Schedule
Particulate (i.e., HEPA)	At least weekly or sooner the employee detects an increase in breathing resistance. This will occur as the filter becomes loaded with particulate matter.
Sorbent (i.e., organic vapor)	At the end of each day's use or sooner if the employee detects an abnormal odor or other indicator.

Personnel who wear air-purifying respirators must be trained in their use and must have successfully passed either a qualitative or quantitative respirator fit test, and medical evaluation within the last 12 months in accordance with and 29 CFR 1910.134.

4.3 Stop Work Conditions

If air monitoring indicates that the site-specific action levels defined in Section 5.2 are exceeded, activities will cease, and personnel must evacuate the designated Exclusion Zone. The PM and RSUM will be contacted immediately.

Work will also cease if unanticipated conditions or materials are encountered or if an imminent danger is identified. The SSO will immediately contact the RSUM for consultation.

HEALTH AND SAFETY PLAN

5. AIR MONITORING PLAN

Real-time air monitoring devices will be used to analyze airborne contaminant concentrations approximately every 15 minutes in the workers' breathing zones while workers are in the designated Exclusion Zone, or when task or exposure conditions change (whichever frequency is less). If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate.

Background concentrations will be determined at the beginning of each work shift by collecting several instrument readings upwind of the scheduled activities. Alternatively, background levels can be determined by collecting readings from a nearby (upwind) area that can reasonably be considered unaffected by Site activities.

Real-time measurements will be made as near as feasible to the breathing zone of the worker with the greatest exposure potential in each active work area. If authorized by the RSUM, real time measurements may cease being taken when enough historical data is generated to warrant its cessation. Air monitoring will be reinstated if potential exposure conditions change.

The equipment will be calibrated daily, and the results will be recorded on BC's Air Monitoring Form. The results of air monitoring will also be recorded on the Air Monitoring Form and will be retained in the project files following completion of field activities. A copy of the Air Monitoring Form is located in Appendix A.

5.1 Monitoring Instruments

On-site worker exposure to airborne contaminants will be monitored during intrusive site activities. A miniature real-time aerosol monitor (mini-RAM or equivalent) will be used to monitor exposure to airborne dusts. The SSO, or designee, will perform routine monitoring during site operations to evaluate concentrations of airborne dusts in employee breathing zones. If airborne dusts are detected above predetermined action levels specified in Section 5.2, the procedures found in Section 4 of this HASP will be followed.

5.2 Site Specific Action Levels

The following action levels were developed for exposure monitoring with real-time air monitoring instruments. Air monitoring data will determine the required respiratory protection levels at the Site during scheduled intrusive activities. The action levels are based on sustained readings indicated by the instrument(s). Air monitoring will be performed and recorded at up to 15-minute intervals.

If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. If during this time, sustained measurements are observed, the following actions will be instituted, and the PM and RSUM will be notified. For purposes of this HASP, sustained readings are defined as the average airborne concentration maintained for a period of one (1) minute above established background levels.

DUST

Activity	Action Level	Level of Respiratory Protection
Invasive Activities (i.e. excavation)	$< 0.1 \text{ mg/m}^3$ above background (dust)	Level D: No respiratory protection required.
	$\geq 0.1 \text{ mg/m}^3$ above background (dust)	Cease operations and evacuate work area. Contact RSUM and PM immediately.

HEALTH AND SAFETY PLAN

6. SITE CONTROL MEASURES

The SSO will conduct a safety inspection of the work site before each day's activities begin to verify compliance with the requirements of the HASP. Results of the first day's inspection will be documented on the Site Safety Checklist. A copy of the checklist is included in Appendix B. Thereafter, the SSO should document unsafe conditions or acts, along with corrective action, in the project field log book.

Procedures must be followed to maintain site control so that persons who may be unaware of site conditions are not exposed to hazards. The work area will be barricaded by tape, warning signs, or other appropriate means. Site equipment or machinery will be secured and stored safely.

Access to the specified work area will be limited to authorized personnel. Only BC employees and designated BC subcontracted personnel, as well as designated employees of the client, will be admitted to the work site. Personnel entering the work area are required to sign the signature page of this HASP, indicating they have read and accepted the health and safety practices outlined in this plan.

In some instances it may be necessary to define established work zones: an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. Work zones may be established based on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and applicability of work zones will be determined for each area based on the nature of job activity and hazards present. Within these zones, prescribed operations will commence using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to maintain a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

Personnel entering the designated Exclusion Zone should exit at the same location. There must be an alternate exit established for emergency situations. In all instances, worker safety will take precedence over decontamination procedures. If decontamination of personnel is necessary, exiting the Site will include the decontamination procedures described in the following section.

7. DECONTAMINATION PROCEDURES

Decontamination will take place in the decontamination area identified on-Site. Workers, PPE, sampling equipment, and heavy equipment leaving the exclusion area will be inspected to determine the level of decontamination necessary to prevent the spread of potentially hazardous materials. Unnecessary equipment and support vehicles are to be left outside the designated Exclusion Zone so that decontamination will not be necessary.

Despite protective procedures, personnel may come in contact with potentially hazardous compounds while performing work tasks. If so, decontamination needs to take place using an Alconox or TSP wash, followed by a rinse with clean water. Standard decontamination procedures for levels C and D are as follows.

- equipment drop
- boot cover and outer glove wash and rinse
- boot cover and outer glove removal
- suit removal
- safety boot wash and rinse
- inner glove wash and rinse
- respirator removal
- inner glove removal
- field wash of hands and face

Site workers should employ only applicable steps in accordance with level of PPE worn and extent of contamination present. The SSO shall maintain adequate quantities of clean water to be used for personal decontamination (i.e., field wash of hands and face) whenever a suitable washing facility is not located in the immediate vicinity of the work area.

Disposable items will be disposed of in an appropriate container. Wash and rinse water generated from decontamination activities will be handled and disposed of properly. Non-disposable items (i.e., respirators) may need to be cleaned or sanitized before reuse. Each site worker is responsible for the maintenance, decontamination, and sanitizing of their own PPE.

Used equipment may be decontaminated as follows.

- Remove adhered materials (i.e., dirt or mud) to increase the effectiveness of the decontamination process.
- An Alconox or TSP and water solution may be used to wash the equipment.
- The equipment will then be rinsed with clean water until it is determined clean.

Each person must follow these procedures to reduce the potential for transferring chemically affected materials off site.

8. TRAINING REQUIREMENTS

BC Site personnel, including subcontractors and visitors conducting work in controlled areas of the Site, must have completed the appropriate training as required by 29 CFR 1910.120. In addition, the SSO will have completed the 8-hour Site Supervisor course, have current training in first aid and CPR, and any additional training appropriate to the level of site hazards. Further site-specific training will be conducted by the SSO prior to the initiation of project activities. This training will include, but will not necessarily be limited to, emergency procedures, site control, personnel responsibilities, and the provisions of this HASP. Each employee will document that they have been briefed on the hazards identified at the site and that they have read and understand the requirements of this HASP by signing the H&S Plan Acknowledgement Form attached as Appendix C.

A daily morning briefing to cover safety procedures and contingency plans in the event of an emergency is to be included with a discussion of the day's activities. These daily meetings will be recorded on the Daily Tailgate Safety Meeting Form. A copy of the Daily Tailgate Safety Meeting Form is included in Appendix D.

9. MEDICAL SURVEILLANCE REQUIREMENTS

BC Site personnel, including subcontractors and site visitors, who will or may work in an area designated as an exclusion zone must have fulfilled the appropriate medical monitoring requirements in accordance with 29 CFR 1910.120(f). Each individual entering an exclusion zone must have successfully completed an annual surveillance examination and/or an initial baseline examination within the last 12 months.

Medical surveillance is conducted as a routine program for BC field staff in accordance with the requirements of 29 CFR 1910.120(f). There will not be any special medical tests or examinations required for staff involved in this project.

A Hepatitis B vaccination will be offered to BC personnel before the person participates in a task where direct exposure to potentially infectious materials is a possibility (i.e., first aid or CPR). For personnel who have potential exposure to sanitary wastes, a current tetanus/diphtheria inoculation or booster is recommended.

10. CONTINGENCY PROCEDURES

Minimum emergency equipment maintained on site will include a fully charged ABC dry chemical fire extinguisher, an adequately stocked first aid kit, and an emergency eyewash station (when corrosive chemicals are present). In addition, employees will consider maintaining the personal emergency supply items listed in Section 3: Natural Phenomena, as appropriate.

In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient), or other predetermined signal. Communication signals, such as hand signals, must be established where communication equipment is not feasible or in areas of loud noise.

It is the SSO's duty to evaluate the seriousness of the situation and to notify appropriate authorities. The first part of this plan contains emergency telephone numbers as well as directions to the hospital. Nearby telephone access must be identified and available to communicate with local authorities. If a nearby telephone is not available, a cellular telephone will be maintained on site during work activities. The operation of the cellular phone will be verified to ensure that a signal can be achieved at the work location.

The SSO, or designee, should contact local emergency services in the event of an emergency. After emergency services are notified, the PM and RSUM will be notified of the situation as soon as possible. If personal injury, property damage or equipment damage occurs, the PM and BC Risk Manager will be contacted as soon as practicable. An Accident/Incident Investigation Report will be completed within 24 hours by the SSO, or other designated person. A copy of the Accident/Incident Investigation Report is included in Appendix E.

At projects conducted at mining facilities, incident reporting requirements differ from OSHA standards. Site-specific MSHA reporting requirements must be addressed in conjunction with the RSUM and PM.

10.1 Injury or Illness

If an exposure or injury occurs, work will be temporarily halted until an assessment can be made to determine it is safe to continue work. The SSO, in consultation with the RSUM, will make the decision regarding the safety of continuing work. The SSO will conduct an investigation to determine the cause of the incident and steps to be taken to prevent recurrence.

In the event of an injury, the extent and nature of the victim's injuries will be assessed and first aid/CPR will be rendered as appropriate. If necessary, emergency services will be contacted or the individual may be transported to the nearby medical center. The mode of transportation and the eventual destination will be based on the nature and extent of the injury. A hospital route map is presented at the front of this HASP.

In the event of a life-threatening emergency, the injured person will be given immediate first aid and emergency medical services will be contacted by dialing the number listed in the Critical Project Information section at the beginning of this plan. The individual rendering first aid will follow directions given by emergency medical personnel via telephone.

10.2 Vehicle Collision or Property Damage

If a vehicle collision or property damage event occurs, the SSO, or designee, will contact the BC Risk Manager for appropriate action.

10.3 Fire

In the event of fire, the alarm will be sounded and Site personnel will evacuate to a safe location (preferably upwind). The SSO, or designee, should contact the local fire department immediately by dialing 911. When the fire department arrives, the SSO, or designated representative, will advise the commanding officer of the location and nature of the fire nature, and identification of hazardous materials on site. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. Site personnel should not attempt to fight a fire if it poses a risk to their personal safety.

Note that smoking is not permitted in controlled areas (i.e., exclusion or contamination reduction zones), near flammable or combustible materials, or in areas designated by the facility as non-smoking areas.

10.4 Underground Utilities

In the event that an underground conduit is damaged during subsurface work, mechanized equipment will immediately be shut off and personnel will evacuate the area until the nature of the piping can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility will be contacted.

10.5 Site Evacuation

The SSO will designate evacuation routes and refuge areas to be used in the event of a Site emergency. Site personnel will stay upwind from vapors or smoke and upgradient from spills. If workers are in an Exclusion or Contamination Reduction Zone at the start of an emergency, they should exit through the established decontamination corridors, if possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove chemically-affected clothing there or, if possible, leave it near the Exclusion Zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SSO, or designated representative, will count and identify site personnel to verify that all have been evacuated safely.

10.6 Spill of Hazardous Materials

If a hazardous material spill occurs, site personnel should locate the source of the spill and determine the hazard to the health and safety of site workers and the public. Attempts to stop or reduce the flow should only be performed if it can be done without risk to personnel.

Isolate the spill area and do not allow entry by unauthorized personnel. De-energize sources of ignition within 100 feet of the spill, including vehicle engines. Should a spill be of the nature or extent that it cannot be safely contained, or poses an imminent threat to human health or the environment, an emergency cleanup contractor will be called out as soon as possible. Spill containment measures listed below are examples of responses to spills.

- Right or rotate containers to stop the flow of liquids. This step may be accomplished as soon as the spill or leak occurs, providing it is safe to do so.
- Sorbent pads, booms, or adjacent soil may be used to dike or berm materials, subject to flow, and to solidify liquids.
- Sorbent pads, soil, or booms, if used, must be placed in appropriate containers after use, pending disposal.
- Contaminated tools and equipment shall be collected for subsequent cleaning or disposal.

11. DOCUMENTATION

The implementation of the HASP must be documented on the appropriate forms (see appendices) to verify employee participation and protection. In addition, the regulatory requirements must be met for recordkeeping on training, medical surveillance, injuries and illnesses, exposure monitoring, health risk information, and respirator fit-tests. Documentation of each BC employee's health and safety records is maintained by the Health and Safety Data Manager in Walnut Creek, California.

Health and safety documentation and forms completed, as specified by this plan, are to be retained in the project file.

Other relevant project-specific health and safety documents, such as MSDSs or client-specified procedures, will be attached to this HASP in Appendix F.

APPENDIX A

Air Monitoring Form



Air Monitoring Form

Page ____ of ____

Instructions: Complete this form immediately prior to project start.

[illegible]

Site Safety Checklist

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: City of Tucson Shooting Range		Project No: 134894
Project/Site Location: 3200 N Silverbell Road, Tucson, Arizona		
Employee Completing Checklist: (Print and Sign):		Date:

Yes No N/A	Yes No N/A
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Written Health and Safety (H&S) Plan is on site?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Respirators are available, properly cleaned, and stored?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Addenda to the H&S Plan are documented on site?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Overhead utilities do not present a hazard to equipt./personnel?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> H&S Plan information matches conditions/activities at the site?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Traffic control measures have been implemented?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> H&S Plan read/signed by all site personnel, including visitors?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Trenches and excavations are safe for entry?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Daily tailgate H&S meetings have been held/documented?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Soil Spoils are at least 2 feet from the edge of the excavation?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Site personnel have required training and medical?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Emergency/FA equipt. is on site as described in the H&S Plan?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Air monitoring is performed/documented per the H&S Plan?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Drinking water is readily available?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Air monitoring equipment has been calibrated daily?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Phone is readily available for emergency use?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Site zones are set up and observed where appropriate?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Utility locator has cleared subject locations?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Access to the work area limited to authorized personnel?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Proper drum and material handling techniques are used?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Decontamination procedures followed/match the H&S Plan?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Waste containers/drums are labeled appropriately?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Decontamination stations (incl. hand/face wash) are set up and used?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Ext. cords are grounded/protected from water/vehicle traffic?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> PPE used matches H&S Plan requirements?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Tools and equipment are in good working order?
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Hearing protection used where appropriate?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> GFCIs used for portable electrical tools and equipment?

Notes

(All "no" answers must be addressed and corrected immediately. Note additional health and safety observations here):

H&S Plan Acknowledgement Form

Instructions: Complete this form immediately prior to project start or as new personnel join the project.

Name of Project/Site: City of Tucson Shooting Range			Project No: 134894		
Project/Site Location: 3200 N Silverbell Road, Tucson, Arizona					
Employee Performing Briefing: (Print and Sign):				Date:	
<p style="text-align: center;">Employee Acknowledgement: The following signatures indicate that these personnel have read and/or been briefed on this Health and Safety (H&S) Plan and understand the potential hazards/controls for the work to be performed.</p> <p style="text-align: center;"><u>Important Notice to Subcontractor(s):</u> Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer's specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested, subcontractors will provide BC with a copy of their own H&S Plan for this project or other health and safety program documents for review.</p> <p>BC's Health and Safety Plan has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC's own employees at the site. A copy of BC's H&S Plan may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's H&S Plan does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities. (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's H&S Plan to identify all hazards that may be present at the Site. Subcontractor personnel are expected to comply fully with subcontractor's Health and Safety Plan and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC H&S Plan. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.</p>					
Print	Sign	Date	Print	Sign	Date

APPENDIX D

Daily Tailgate Meeting Form

Name of Project/Site: City of Tucson Shooting Range			Project No: 134894		
Project/Site Location: 3200 N Silverbell Road, Tucson, Arizona					
Employee Completing Form: (Print and Sign):				Date:	
<p style="text-align: center;">Employee Acknowledgement: The following signatures indicate that these personnel have read and/or been briefed on this Health and Safety (H&S) Plan and understand the potential hazards/controls for the work to be performed.</p> <p style="text-align: center;">Important Notice to Subcontractor(s): Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer's specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested, subcontractors will provide BC with a copy of their own H&S Plan for this project or other health and safety program documents for review.</p> <p>BC's Health and Safety Plan has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC's own employees at the site. A copy of BC's H&S Plan may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's H&S Plan does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities. (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's H&S Plan to identify all hazards that may be present at the Site. Subcontractor personnel are expected to comply fully with subcontractor's Health and Safety Plan and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC H&S Plan. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.</p>					
Print	Sign	Date	Print	Sign	Date
Plan of the Day (Describe the activities that are planned to be performed today)					
Potential Hazards and Topics Discussed (Describe the potential hazards and controls that may be associated with planned activities)					
<input type="checkbox"/> Electrical <input type="checkbox"/> Chemical <input type="checkbox"/> Biological <input type="checkbox"/> Physical <input type="checkbox"/> Other (specify):					

Incident Investigation Report

Instructions:

If an accident or incident occurs, complete all applicable information in this form, make a copy for your records, and immediately forward the original to the office Health and Safety Coordinator (HSC). If fields are not applicable, indicate with "N/A". Use separate sheet(s) if necessary and attach sketches, photographs, or other information that may be helpful in understanding how the accident/incident occurred.

HSC – Review and enter report into the BC Online Safety Observation and Incident Reporting System within 3 workdays of receipt. File original in appropriate office health and safety file.

NOTE:

This report is important – please take the time necessary to properly complete it. Incomplete reports will be forwarded to appropriate management for review and action.

General Information

Date of Accident/Incident	Time of Accident/Incident:	Date Accident/Incident Reported:	To Whom:
Exact Location of Accident/Incident (Street, City, State):			BC Office:
Name Project:			Project Number:
Employee Completing the Investigation (Print and Sign):			Date:

Injured/Ill Employee/Property Damage Information

Employee Name:	Employee No.	Department:	Phone Number:
Job Title:		Manager's Name and Phone Number:	
Nature of Injury/Illness (laceration, contusion, strain, etc.):		Body Part Affected (arm, leg, head, hand, etc.):	
Describe Property Damage and Estimate Loss :			

Description of Accident/Incident

Describe the accident sequentially, beginning with the initiating event, and followed by secondary and tertiary events. End with the nature and extent of injury/damage. Name any object or substance and tell how they were included. Examples: 1) Employee was pulling utility cart that was loaded with wastepaper from office area to hallway. Wheel of utility cart caught against door casing. Bags of heavy wastepaper that were in cart fell to end of cart. Cart tipped over onto foot of employee. Right foot was crushed between utility cart and door casing, resulting in severe contusion to right foot of employee. 2) Employee was driving rental car from office to project site. Car struck icy section of road. Employee lost control of vehicle, which skidded across road into concrete abutment on side of road. Accident resulted in damage to right fender, tire, headlight, and grill.

Analysis of Accident Causes

Immediate Causes - Substandard Actions

What substandard actions caused or could have caused the accident/incident? State the actions on the part of the employee or others that contributed to the occurrence of the accident/incident. Examples: 1) Employee overloaded the utility cart with wastepaper. 2) Employee exceeded safe speed on icy road, and was inattentive to hazard.

Codes (check all that apply)

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> 1. Operating equipment without authority | <input type="checkbox"/> 5. Making safety devices inoperable | <input type="checkbox"/> 9. Failure to use PPE properly | <input type="checkbox"/> 13. Improper position for task |
| <input type="checkbox"/> 2. Failure to warn | <input type="checkbox"/> 6. Removing safety devices | <input type="checkbox"/> 10. Improper loading | <input type="checkbox"/> 14. Servicing equipment in operation |
| <input type="checkbox"/> 3. Failure to secure | <input type="checkbox"/> 7. Using defective equipment | <input type="checkbox"/> 11. Improper placement | <input type="checkbox"/> 15. Horseplay |
| <input type="checkbox"/> 4. Operating at improper speed | <input type="checkbox"/> 8. Using equipment improperly | <input type="checkbox"/> 12. Improper lifting | <input type="checkbox"/> 16. Alcohol or drug influence |
| <input type="checkbox"/> 17. Other (specify) | | | |

Immediate Causes - Substandard Conditions

What substandard conditions caused or could have caused the accident/incident? State the conditions that existed at the time of the accident (the specific control factors that were or may have been the direct or immediate cause or causes of the accident). Examples: 1) Wheel of utility cart was worn and would not roll properly; utility cart was overloaded with wastepaper. 2) Road was covered with icy spots; weather was foggy.

Codes (check all that apply)

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> 1. Inadequate guards or barriers | <input type="checkbox"/> 4. Congestion or restricted action | <input type="checkbox"/> 7. Poor housekeeping | <input type="checkbox"/> 10. High or low temperature exposures |
| <input type="checkbox"/> 2. Inadequate or improper PPE | <input type="checkbox"/> 5. Inadequate earning system | <input type="checkbox"/> 8. Noise exposures | <input type="checkbox"/> 11. Inadequate or excess illumination |
| <input type="checkbox"/> 3. Defective tools, equipment, or materials | <input type="checkbox"/> 6. Fire and explosion hazards | <input type="checkbox"/> 9. Radiation exposures | <input type="checkbox"/> 12. Inadequate ventilation |
| | | | <input type="checkbox"/> 13. Hazardous environ. conditions (vapors, dusts, etc.) |
| <input type="checkbox"/> 14. Other (specify) | | | |

Basic Causes - Personal and Job Factors

What personal and/or job factors caused or could have caused the accident/incident? State the influencing factors or underlying causes, either conditions or actions or both, that contributed to the accident/incident. Examples: 1) Employee had not been instructed in overloading hazards. 2) Employee had not been trained in driving under winter conditions; company has no driver training program.

Codes (check all that apply)

Personal Factors

- ☐ 1. Inadequate capability ☐ 2. Lack of knowledge ☐ 3. Lack of skill ☐ 4. Improper motivation
☐ 5. Other (specify): _____

Job Factors

- ☐ 1. Inadequate leadership/supervision ☐ 2. Inadequate engineering ☐ 3. Inadequate purchasing ☐ 4. Inadequate maintenance ☐ 5. Inadequate tools/equipment
☐ 6. Inadequate work standards/procedures ☐ 7. Inadequate Wear and tear ☐ 8. Abuse or misuse
☐ 9. Other (specify): _____

Remedial Actions

Describe the actions taken or planned to prevent recurrence of accident/incident - provide the implementation date and person responsible for any planned corrective action.. Examples: 1) Wheels of utility cart were replaced with larger size wheels; all carts were inspected for safe operation; employees were instructed in overloading hazards. 2) All project personnel were instructed at the safety training meeting on driving under hazardous conditions; driver training program will be implemented.

Codes (check all that apply)

Job Factors

- ☐ 1. Reinstruction of personnel involved ☐ 2. Reprimand of personnel involved ☐ 3. Temporary/permanent reassignment of personnel ☐ 4. Action to improve clean-up
☐ 5. Equipment repair or replacement ☐ 6. Improve design ☐ 7. Improve construction ☐ 8. Improve PPE ☐ 9. Install of safety guard or device ☐ 10. Work method change
☐ 11. Order use of safer materials ☐ 12. Regional Safety Unit Manager Review
☐ 13. Other (specify): _____

Miscellaneous Health and Safety Information

APPENDIX B

Air Monitoring Plan

AIR MONITORING PLAN

AIR MONITORING PLAN

This section describes the general concepts of an air monitoring program and specifies the activities that will take place during the project.

The purpose of air monitoring is to identify and quantify airborne contaminants in order to verify and determine the level of worker protection and evaluate potential community exposures. Initial screening for identification is often qualitative, but the determination of its concentration must await subsequent testing. Two principal approaches are available for identifying and/or quantifying airborne contaminants to include the use of on-site direct-reading chemical monitoring instruments and laboratory analysis of air samples obtained by gas sampling bags, collection media, or wet-scrubber collection methods.

Identification of potential hazards in the hazard analysis portion of the Site Safety and Health Plan (SSHP) indicated initial and/or ongoing monitoring for worker assessment of exposure to lead. The potential generation of lead-containing dust during excavation will be minimized using dust control procedures, personnel decontamination, and worker and perimeter air monitoring to verify the adequacy of control measures.

A conservative assumption of 7,000 mg/kg for lead in soil, able to become entrained and airborne, will be used for action limit calculation purposes. Additionally, soil around intrusive and dust generating (i.e. dirt roads) activities will be kept moist at all times. Worker and perimeter locations will receive representative sampling using pre-calibrated sampling pumps with air inlets located in the breathing zone and at perimeter locations. The pumps will be operated continuously during fieldwork activities. The filter cassettes will be collected at the end of each fieldwork day. Background air samples will be collected prior to the start of work and sample collection for the first 2-3 days of work will be analyzed on a rush turn around basis. The cassettes will be shipped together with field blanks under chain-of-custody procedure to an American Industrial Hygiene Association (AIHA) accredited laboratory for lead analysis.

AIR MONITORING LOCATION & FREQUENCY

Prior to entering an exclusion zone, all field personnel will, at a minimum, utilize the level of protection outlined in this Plan. Periodic confirmatory air sampling will be performed to ensure that field personnel are not exposed to airborne contaminant concentrations in excess of action levels.

It is the responsibility of each contractor to determine the personnel exposure for their employees. Each contractor is expected to perform initial monitoring of their employees who are or may reasonably be expected to be exposed to airborne concentrations at or above the action levels. After the initial determinations have been made, sampling shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of their employees.

Baseline

Baseline (background) monitoring will be accomplished by conducting a north, south, east, and west sampling walk of the exclusion zone perimeter. Both the time-weighted lead in air samples and the Personal Data Ram (Mini-Ram) will be used, when appropriate, and all results will be documented.

Monitoring of Active Work Areas

During the period of active work in any exclusion zone, real time monitoring and indirect monitoring will be performed by or under the direction of the Site Safety Officer (SSO), or designated representative, in each active work area as deemed necessary. Real-time measurements will be made as near as feasible to the breathing zone of the worker with the greatest exposure potential in each active work area. Any concentration above the action levels will be reported to the SSO and action taken. At a minimum, real time

measurements will be taken every 15 minutes, or when task or exposure conditions change (whichever frequency is less). Real time measurements will cease being taken when enough historical data is generated to warrant its cessation (i.e. one full week of monitoring). All indirect sampling media will be analyzed by an AIHA-accredited laboratory.

Table 1 summarizes the air monitoring requirements and action levels. Also shown in Table 1 is an action plan in the event an action level is exceeded.

Table B-1. SITE WORKER AIR MONITORING				
TEST METHOD/ EQUIPMENT	EXPOSURE LIMITS*		ACTION LEVEL	ACTION PLAN
	OSHA PEL	ACGIH TLV		
Inorganic Lead Compounds				
NIOSH Method 7300; with air monitoring pumps and filters	0.05 mg/m3	0.05 mg/m3	a. <0.03 mg/m3 b. 0.03 < and > 0.3 mg/m3 c. > 0.3 mg/m3	a. Continue Work and Monitoring b. Upgrade to Level C and continue to monitor. Check with H&S Manager for additional measures needed. c. Suspend work; evaluate source and mitigation measures.
Nuisance Dust				
a. Direct-reading, Mini Ram	Total 15 mg/m3 Respirable 5.0 mg/m3	Inhalable 10 mg/m3 Respirable 3.0 mg/m3	<0.5 mg/m3 b. 0.5 < and >1.0 mg/m3 c. >1.0 mg/m3	a. Continue Work and Monitoring b. Upgrade to Level C and continue to monitor c. Suspend work; evaluate source and mitigation measures.
* Exposure limits established by the Occupational Safety and Health Administration (OSHA) and Threshold Limit Values published by the American Conference of Governmental Industrial Hygienist, 1997.				

Perimeter Monitoring

During all Site activities and whenever an upgrade to Level C is necessary, the perimeter of the work zone closest to the off-site receptors will be monitored according to the following list of initial and/or ongoing monitoring for community exposure assessment (Table 2). At a minimum, two off-site locations should be monitored as part of the perimeter monitoring program.

TABLE B-2. PERIMETER AIR MONITORING		
TEST METHOD/EQUIPMENT	ACTION LEVEL	ACTION PLAN
Inorganic Lead Compounds		
NIOSH Method 7082; with air monitoring pumps and filters	a. At or below background* b. Above background*	a. Continue Work and Monitoring b. Suspend work; evaluate source and mitigation measures.
Nuisance Dust		
a. Direct-reading, Mini Ram	a. <0.15 mg/m ³ above background*	a. Continue Work and Monitoring
b. NIOSH Method 500; with air monitoring pumps and filters	b. > 0.15 mg/m ³ above background*	b. Suspend work; evaluate source and mitigation measures
* - Dust control measures will be used to ensure baseline offsite lead levels do not exceed NAAQS standards.		

In addition to the requirements listed above, a continuous dust monitoring meter will be placed on the fence, just north of the 50,000-cubic yard stockpile and south of the second house from the right. This monitor will provide data logger information on continuous monitoring for comparison to real samples of lead. A real-world correlation can then be made between the amount of dust and concentration of lead at any given time.

Calibration of Monitoring Equipment

It is essential that each piece of hazardous waste site monitoring equipment be calibrated on a routine basis. This assures that a given monitoring instrument is both working and working with reasonable degree of accuracy. This procedure outlines required calibration frequencies and techniques. The manufacturers' instruction manual should always be available for specific calibration procedures and other information.

Frequency of Calibration

The following instruments must be calibrated before use:

- Air Sampling Pumps (various flow rates)
- Aerosol/Particulate Monitor

Calibration Techniques

Air Sampling Pumps

The flow rate of air sampling pumps must be calibrated within a range depending upon the chemical of concern and the collection medium for the sample. Calibration is achieved by connecting the hose assembly with collection medium attached, to a calibrator (e.g., MiniBuck) and observing the flow rate. A set screw or knob is then turned until the flow rate is within the desired range.

Refer to the National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods for the prescribed flow rates and sampling media for the targeted concern, if needed.

Aerosol/Particulate Monitors

Some particulate monitors must be factory recalibrated, however they should be zeroed daily.

Periodic Instrument Response Checks

It is important that each piece of monitoring equipment be checked occasionally during its use to determine that it is responding to contaminants. These “response checks” are the key to providing confidence to the user that the instrument is at least functioning and responding to contaminants.

APPENDIX Z

CD – PDF version of Entire Report